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# NEW HEALTH CONSCIENCE

J. C. ELLIOTT

Methodist
Historical Society

*Southern California-Arizona
Conference*

*Presented by*

Mrs. Lloyd J.B.Taber

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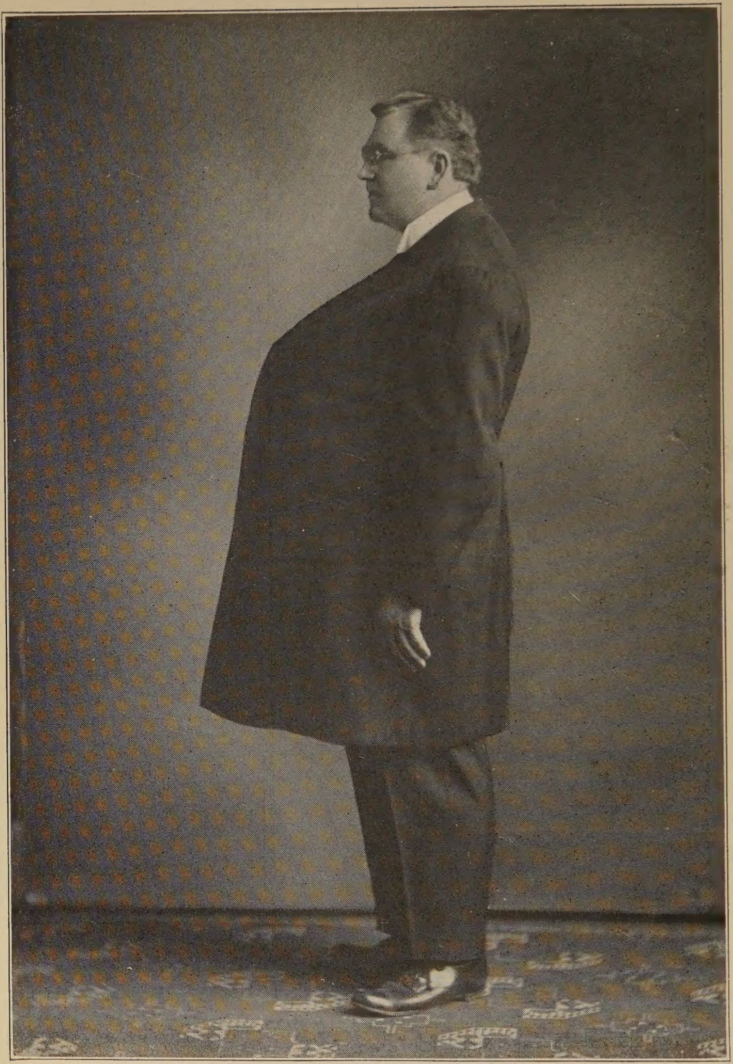
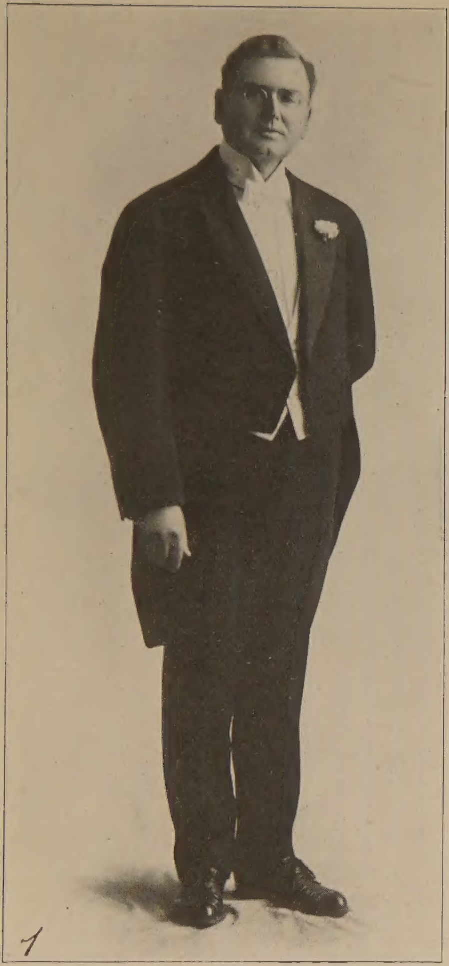
J. C. Elliott.



J. C. Elliott, before practicing the principles of the New Health Conscience, weighing almost two hundred and fifty pounds.



J. C. Elliott, four years later, after practicing the principles of the New Health Conscience, net weight one hundred and sixty pounds.

To
My Dear Wife Hattie E. Elliott
Greatly Benefited by the Principles of
The New Health Conscience
To
My Son, J. Paul Elliott
Restored to Vigorous Health
Through These Same Principles
And
To His Loving Wife
Florence Elliott
This Book is
Affectionately Dedicated

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# *The*
# NEW HEALTH CONSCIENCE

OR THE

## MODERN SCIENCE *of* HEALTH
AND THE
## NORMAL CARE *of* THE BODY

### VOLUME I

### *The* KEYSTONE *of* HEALTH

The Normal Supply of Food for Health
The Scientific Selection of Foods
Healthful Combinations of Foods
Scientific Healthful Breathing
Hygienic Healthful Bathing
The Bedroom Gymnasium
Obesity is Conquered
Blood is Purified
Health Restored
Brain Vitalized
Food Tables
Receipts
Menus

——BY——

J. C. ELLIOTT
Three Years Field Superintendent of the Methodist Hospital
of Southern California
Los Angeles
Cost of completed plant, $400,000

J. C. Elliott, Publisher, Los Angeles

*"Labor is life: 'Tis the still water faileth;*
*Idleness ever despaireth, bewaileth:*
*Keep the watch wound for the dark night assaileth:*
*Flowers droop and die in the stillness of noon.*
*Labor is glory: The flying cloud lightens:*
*Only the waving wing changes and brightens:*
*Idle hearts only the dark future frightens;*
*Play the sweet keys would you keep them in tune."*
*—Mrs. Francis Osgood.*

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# PREFACE

*''So live, that when thy summons comes, to join*
*The innumerable caravan, that moves*
*To that mysterious realm, where each shall take*
*His chamber in the silent hall of death,*
*Thou go not, like the quarry slave at night,*
*Scourged to his dungeon; but sustained and soothed*
*By an unfaltering trust, approach thy grave*
*Like one who wraps the drapery of his couch*
*About him, and lies down to pleasant dreams.*
BRYANT, *Thanatopsis.*

''The New Health Conscience'' is the title of a series of books covering the entire field of modern methods of caring for the body along the lines of breathing, bathing, diet, and exercise, making prevention rather than cure, the dominant note in the preservation of vigor, youth, and health. Believing that health is more contagious than disease, in the normal condition of the body, we present this system of health culture for the preservation of health, and the prolongation of life.

### PREVENTION OF DISEASE

Prevention of disease is becoming the dominant note in modern therapeutics. This series of books will review the whole field of modern scientific health culture, presenting the new ideals that are revolutionizing the principles of the care of the body along the lines of breathing, bathing, diet, and exercise. The New Health Conscience will reveal the marvelous awakening in all scientific circles on this important subject. It will mark the transition in medical science, and reveal the trend of thought of the leading physicians of the age, showing their marvelous service to humanity in developing the ideals for the prevention of disease, conscious of the fact that this service to humanity reduces their own revenue.

### THE MISSION OF THE BOOK

This manual of Health Culture is sent forth on its mission of service to suffering humanity. It is sent on its mission of service to the students of our grammar schools, high schools, and colleges, so that in their studies they may lay the foundations for health, vigor, and long life: instead of sowing the seeds of disease that shall wreck their nervous, physical, and intellectual being. Ignorance along these lines has brought thousands of college students to their college graduation, with trained intellects, and wrecked bodies.

### TO PROFESSIONAL MEN

This manual is sent forth on its mission to my brethren in professional life as a warning and danger signal, admonishing them to care for their bodies, pleading with them to observe God's laws in Nature along the lines of breathing, bathing, diet and exercise, as set forth in the principles of the ''New Health Conscience.'' Many of our professional men and students are fighting a losing battle for health because of the poisons generated from an abnormal food supply, or because the cell life of nerve, muscle, and brain, are starving for the necessary oxygen to purify the blood.

### SURPLUS FLESH

It is sent forth on its mission of love to those who, like my former-self, are bound with the burden of surplus flesh, and poisoned with the decomposition of an abnormal food supply which can not be digested or assimilated, but which must decay in the intestines, sending its poisonous fumes over the whole system, wrecking the cell life of nerve, muscle, and brain, carrying thousands annually to premature death.

This manual is sent forth that it may sound anew that dominant note of the New Health Conscience—prevention. It is sent forth proclaiming a new life through a generous supply of oxygen, a normal supply of food, a liberal amount of exercise, and a system of bathing including the friction bath, the air bath, the sun bath, the hot water bath and the cold water bath, so that the blood may course through the blood stream of a thousand miles reaching every artery, capillary, and vein, carrying new life to every cell of nerve, muscle, bone, and brain. Health is the normal condition of the body when properly cared for.

### TO ALL PEOPLE

This manual of Health Culture is sent forth on its mission of service to all people. To the clerks in the store and in the counting house, and the artisan at the factory and at the forge, who are shut up from nature's labyrinth of health in the fresh air and broad sunlight. To the mothers who are shut in by the demands of the home life, and the daughters confined to the home, the school, and the store. To the merchant at his desk, and the banker at his vaults. To the tiller of the soil on his ranch or plantation, the mechanic at his craft, and the toiler at his task, this book offers the suggestions of perfect health through the principles of the New Health Conscience.

Health is Nature's greatest temporal blessing for humanity.

> *"Ah, what avails the largest gifts of heaven*
> *When drooping health and spirits go amiss?*
> *How tasteless then whatever can be given;*
> *Health is the vital principle of bliss."*
>
> —JAMES THOMSON.

### PERSONAL REQUESTS

I am writing this book at the personal request and pleadings of scores and hundreds of my personal friends, who knew of my rich inheritance in a strong constitution. Who knew as well of my complete nervous and physical breakdown. Who know also of my complete restoration to vigorous health and athletic endurance. I am writing it at the suggestion of scores and hundreds who have asked me for an outline of the system of Health Culture by which I was restored to health and vigor. During the past four years I have done the most strenuous work of my life. Much of the time I have worked from 12 to 15 hours per day and sometimes 18 hours. These personal benefits in restoration to vigorous health and the many requests from my friends has led to the publishing of this system of Health Culture, known as the New Health Conscience.

### PREPARATION OF THE BOOK

I have written these thoughts as an intensely busy man. They have been jotted down on the crowded city street car, on railway trains, in depot waiting rooms, in city offices as I waited my turn to meet intensely busy men on hospital business. I have written some of them at the dead hour of midnight, some as early as two o'clock in the morning. Much has been written from five to seven o'clock in the morning. I am a light sleeper and can work 18 hours and rest and sleep 6 hours when necessary. The information I bring has been gathered from many fields as well as my own experience. I have been a close student of leading writers on modern health culture. I am giving to others in permanent form the principles of breathing, bathing, diet, and exercise which have been most helpful in my own restoration to health.

### COURTESY TO AUTHORS

When I have used arrows from other men's quivers I have been very careful to render them due credit. If I have snatched jewels from other diadems, I have been very careful to label the case and tray from which they were selected. The treasures I bring you are out of my own heart and out of my own experience; I am transmitting them for the good of humanity. You will find at the close of this volume a list of books and authors that have been most helpful to me in studying this great problem of health and Health Culture in shaping and presenting the principles of "The New Health Conscience."

### PERSONAL BENEFITS

The law of evidence and testimony is one of the basic principles of civilization. The author desires to present his testimony to the intrinsic value of the applied principles of the New Health Conscience, in his own case, and that of the members of his family.

I inherited a strong constitution. This was fortified by fifteen years of rugged Ohio farm life. The woods and the fields were my gymnasium. The ax and the woodpile, the mattock and the clearing, the hoe and the cornfield, the scythe and the meadow, the cradle and the golden field of grain, formed a full equipment, and a complete apparatus. I have spent the last thirty years of my life in California. For twenty-seven years I have been a minister of the Methodist Episcopal Church in the Southern California Conference. I studied medicine before I studied theology, and for seven years waged a bitter warfare with my own inner consciousness, between my chosen profession of medicine, and my distinct call to the ministry. While I made a definite decision in the line of duty, I always maintained a profound interest in the science of medicine and in suffering humanity.

### SUPERINTENDENT OF THE METHODIST HOSPITAL

In 1911 at the request of the District Superintendents of the Southern California Conference, Bishop Edwin H. Hughes appointed me Field Superintendent of the Methodist Hospital of Southern California, which position I held for three years. Two years previous to this I suffered a complete physical and nervous breakdown. I was compelled to give up my pastorate in Los Angeles, and for a time my life was despaired of, from threatened apoplexy, by which a number of my ancestors had fallen. Blood would settle in the sides of my face and in the lobes of my ears until they were black, from poor circulation. Just previous to this I had become interested in health culture, while president of the Los Angeles Methodist Preachers' Meeting. I had been selected as chairman of a body of about 200 ministers of Los Angeles and surrounding cities, to arrange for an Evangelistic health campaign, which was to be conducted by a noted health lecturer. When my health broke down, and I was compelled to give up my work, I traveled with this health lecturer for two years, as manager of the Evangelistic Health Campaign.

### RESTORATION TO HEALTH

This work proved a great blessing to me and was the means of my complete restoration to health. My daily demonstration of the work before the leading ministers of the larger cities of the United States, and before the editors of the leading newspapers of these same cities, and finally my presentation of the Health Culture Work before large classes of ministers throughout the larger cities with from 25 to 50 ministers in attendance, and often a number of physicians, was the very thing necessary for my complete restoration to health. In connection with this I pursued a complete system of breathing, bathing and diet.

Could you have seen me at the time I began this work you would have said, you certainly need health culture. I weighed about 245 pounds. My waist measurement was 53 inches. They said I carried everything before me. I traveled by the "Balloon Route"—in fact, I carried the balloon with me. At this time I became a constant student of health culture, I read all I could find on modern methods for the care of the body along natural lines, as well as the leading authors and scientists on the prevention of disease. I not only found complete restoration to health, but saw my surplus flesh rapidly disappear.

### REDUCTION OF SURPLUS FLESH

I reduced my weight from 245 pounds to 190 pounds and my waist line from 53 inches to 37 inches. On the 15th day of January, 1914, in shirt sleeves and stocking feet I weighed 175 pounds, showing a reduction of 70 pounds from my former weight. I increased my chest expansion from 3 inches to 9 inches when in constant practice. There was no trace of flabbiness or wrinkles in my face or on my body. My friends declared I looked fifteen years younger than when I began the treatment. Some of my friends did not recognize me when I returned from my two years of travel in the work of the Evangelistic Health Campaign. Most of all I prize my complete restoration to perfect health and to athletic conditions. I owe it to this system of Health Culture as presented in the principles of The New Health Conscience, which presents the normal care of the body along the lines of breathing, bathing, diet, and exercise.

### A BLESSING TO WOMANHOOD

The principles of the New Health Conscience carry a great blessing to womanhood, both to mothers and daughters. Mrs. Hattie Elliott, my wife, has received untold benefits from this system of Health Culture. She traveled with us for almost a year in this work, and has not only practiced it thoroughly but has taught it extensively as well. Her health and strength today is far greater than at any time for the past twenty-five years. Being naturally slender she has gained about 20 pounds in weight. She is herself a fine athlete and a splendid swimmer in the ocean breakers, and a most excellent teacher and demonstrator of Health Culture work. Health Culture has a message for every mother and daughter.

### HEALTH CULTURE'S MESSAGE TO YOUNG MEN

The message of Health Culture to young men is imperative and priceless. It holds the secret of health, vigor, virility, efficiency, and life. It has wrought a revolution in the life of my son, J. Paul Elliott. It transformed him from a hollow-chested boy with only two inches chest expansion, when 13 years of age, to a rugged youth with a chest expansion of 11 inches, the record for high school boys of the United States. This transformation came in 8 months. It changed him from a sickly boy, with continual colds settling on his lungs, to a stalwart youth practically proof against colds, catarrh, la grippe and pneumonia. It lifted him from the rank of the dull pupil, as a laggard in his studies with scarcely passing grades, receiving an encore on his sixth grade work and repeating the same, and placed him at the head of the scholarship of his class ranking with highest honors. His Health Culture revolutionized his life. On entering the eighth grade of the grammar school his teacher said to me "It is foolishness to keep Paul in the 'B' eighth, he is so far in advance of his class; he can just as well take both the 'B' and the 'A' eighth. I will promote him if you will give your permission." He was promoted and graduated with honors in the middle of the school year. He traveled with us for about nine months in our Health Culture Campaign, practicing and teaching, and demonstrating the benefits of the work throughout the United States.

### HIGH SCHOOL CAREER

He returned to Los Angeles and entered the Manual Arts High School, perhaps the finest high school building of all the West, costing more than half a million dollars. He gained sufficient credits for graduation in three years, but continued in some major studies the first semester of the fourth year, graduating with highest honors as president of his graduating class.

### SCHOOL HONORS

He held almost every place of honor within the gift of his school. Manager of the High School paper. Vice-president and President of the Senate Debating Club. Member of Student Body Council two years. Reorganized and drafted constitution for Adelphic society, providing all school programmes. Manager of Adelphic Programme, and Adelphic Vaudeville, two of the school's best productions. With his colleagues won three successive debates in the South Western Debating League. Vice-president of the student body, and President of the Winter '14 Graduating Class. He developed into an eloquent forceful speaker and a keen debater. He delivered the Alumni Address to the graduating class of June, 1915. In addition to all his school work he was the musical director of an orchestra of 35 pieces, directing the orchestra weekly and presenting two public concerts quarterly. Filled a paid church position as cornetist, and many special engagements, and taught private pupils on the cornet. He is now a student in the University of Southern California. These achievements are given simply to show what the applied principles of the New Health Conscience has done for one delicate, backward, grammar school boy. He is now an accomplished athlete and Health Culturist. He had charge of one of the largest health culture classes in the United States, numbering about 600, when he was not yet nineteen years of age. This class was in the Temple Baptist Church, Los Angeles, of which Dr. J. Whitcomb Brougher is pastor.

# INTRODUCTORY

*"For love, nor honor, wealth nor power*
*Can give the heart a cheerful hour*
*When health is lost. Be kindly wise,*
*With health all taste of pleasure flies."*
—UNKNOWN.

The purpose of this book is not the treatment of disease. That belongs to the physician, not the layman. It is not the purpose of the author to supplant the physician, or declare him obsolete. The true physician is a benefactor to the individual, the home, the state, the nation, and the race. The author does not presume to enter the field for the healing of disease. He leaves that realm entirely in the hands of competent, skilled physicians. The purpose of this book is to present a rational, safe, sane, common-sense method of caring for the body, so that it may be preserved in health, which is its normal condition. It was created for health, not disease.

Disease is the result of the abuse of the body, through ignorance, wilful abuse, or criminal neglect. The body has been provided with organs each having its own peculiar functions. If the body is properly cared for and not abused, each organ will perform its functions, and the result will be normal health. We shall endeavor to bring to the mind of the reader some of the primary principles for the care of the various organs of the body, so that they shall neither be neglected, over worked, nor abused. Among the most important factors in the preservation of the health of the body will be found our breathing, our food supply, our eliminating organs, our bathing and our exercise.

## BREATHING

Our system must be fed with oxygen as well as with food. An adequate supply of oxygen for the purification of the blood, is really more important than an adequate food supply. We can live weeks without food, and days without water, but only moments without oxygen. Our food supply is valueless until it has been thoroughly digested and assimilated and fed to the individual cells of tissue, nerve, muscle, bone and brain, then the climax in nutrition is reached in oxidation, as the oxygen unites with the food in the individual cell, and the combustion generates the necessary heat and energy for the demands of the body. The purification of the blood, the feeding of the cell life, the generation of the necessary heat and energy for the demands of the body, depend largely on our breathing. One of the principles of this book will be to teach us how to breathe so that we may furnish an adequate amount of air in the lungs to meet the demands of the body.

## THE LUNGS

The scientists tell us there are 2000 square feet of breathing surface in the lungs and that they are filled with 725,000,000 air cells and that it requires from 250 to 350 cubic inches of air to fill all these air cells. The unused air cells are the breeding grounds of disease germs. The walls of these air cells are so delicate that the air passes freely through them and is carried by the red blood corpuscles through the arteries, capillaries and veins to every cell of the body. The blood makes its circuit from the lungs through the heart and the body, returns to the heart, and by another heart throb is forced through the pulmonary artery to these millions of air cells in the lungs, laden with the carbonic acid gases generated in its mission in the body. This carbonic acid gas is forced through the delicate walls of these air cells in the lungs as freely as the smoke filters through the net curtains and is exhaled by the breath.

This book will teach us how to breathe so that we may have the necessary 250 cubic inches of air for the purification of the blood; how to expand the chest so that we may have a chest expansion of at least 5½ inches; (it is impossible to furnish the system the necessary oxygen for good health without this amount of chest expansion); how to eliminate the poisonous carbonic acid gas from the lungs so that the whole system will not be poisoned.

Professor Metchnikoff, of the Pasteur Institute of Paris, says in substance that the man who runs half a block and falls down dead, died not from heart disease, as commonly reported, but from asphyxia, from carbonic acid gas. Proper breathing will eliminate this poisonous gas from the lungs and from the system as well.

## OXYGEN

Oxygen is the greatest purifier of the blood known to man. It is Nature's own best remedy. Ignorance on the part of the individual in the proper use of the lungs, to supply the necessary amount of oxygen for the purification of the blood, and the normal development of the lungs, has been the chief cause of the appalling death roll from tuberculosis. Many other diseases have their origin in the inadequate supply of oxygen for the system. Many individuals are trying to live on a tidal breath of from 30 to 50 cubic inches of air, when they should have from 50 to 100 cubic inches. Oxygen is God's free gift to man, yet countless millions are starving in the midst of plenty.

## OUR FOOD SUPPLY

The food supply of the body is one of the vital elements of life. The engine on the track may be a model of perfection in its construction, but its perfection in efficiency depends on its fuel supply. Its fuel must not only be of the right kind, but it must be furnished in scientific proportions. You can neither fire it with paper nor dynamite. You must have the right kind of fuel and the fuel must be used in the right proportions. Too much or too little coal, wood or oil will destroy the finest engine on the road. The engine is useless unless you have a competent fireman and a competent engineer.

Disease in the body is the result of an incompetent fireman and engineer. They have furnished an inadequate fuel supply in the food of the body; it may have been improperly prepared; it may have been inferior in quality; it may have been wrongly administered; most likely it had been given in abnormal quantities, and the engineer had neglected to care for the machine properly. The purpose of this book is to make every reader competent to supply the real fuel demands of the body in food, thus furnishing a well balanced ration, so that the individual shall not be over fed or under nourished. It is further hoped that each reader shall become competent to care for all the organs of the body, so that they may properly perform their functions and preserve the body in perfect health.

### OVER-EATING

Over-eating is the crime of the American people against their bodies. It is rapidly becoming their curse. The digestive organs can digest only a certain amount of food. All the additional food supply must be bacterially digested in the stomach, duodenum and intestines. This means that the surplus food must decompose, putrify and decay in these digestive organs. This decomposition causes the generation of poisonous gases, which pass through the whole system, causing auto-intoxication. If this process of over-eating is long continued, the whole system is deranged, and the foundation of many dangerous diseases is laid.

Hundreds of thousands of people annually lay the foundation for nervous prostration, heart disease, paralysis, apoplexy, sclerosis, or hardening of the arteries, diabetes and Bright's disease by the sin of over-eating. Dr. Gilfoy, chief of the health department of New York City, declared some time ago that in the face of all the advances of medical science in the last 30 years, heart disease and kidney disease had increased their toll of death more than a hundred per cent. He also declared that the chief cause of the increase was due to the over-eating of the American people. The death roll from diseases affecting the blood vessels, the kidneys, and the heart, per each 100,000 inhabitants in 1880 was 190, in 1900 it was 243, and in 1908 it was 387. This more than doubles the death roll in a little more than a quarter of a century, and this in the face of all the advances of medical science, which has been marvelous. The principle cause of this alarming increase is attributed by our best scientists to improper diet.

Scientists and physicians declare that the alarming increase in the death rate from kidney trouble and heart disease is caused from over-eating and improper diet. If this be true, a better knowledge of diet, food and food values is imperative. The New Health Conscience sounds a new note on these vital subjects.

### THE ELIMINATING ORGANS

It has been estimated that there is sufficient poison generated in the body to cause death in less than five minutes, were it not for the work of the eliminating organs. The principal eliminating organs of the system are the lungs, the liver, the kidneys, the intestines and the skin. We have already mentioned the eliminating work of the lungs. The liver is the greatest manufacturing plant in the world for its size. While its weight is but about four pounds, it manufactures about two and one-half pounds of bile per day from the poisons and waste matter, and broken down cells, gathered from the portal circulation of the blood. This is the blood used in the digestive tract in digesting the food supply. These poisons are eliminated from the blood and manufactured into bile and stored in the gall bladder and poured into the duodenum as the food passes from the stomach thereto. The liver with its four pounds of weight manufactures about 900 pounds of bile annually.

It also eliminates the poisonous urea from the portal blood and passes this on to the kidneys for final elimination.

### THE KIDNEYS

The kidneys are marvelous in their work of eliminating poisons. It is said that the combined length of the capillaries for the eliminating of the poisonous urea through the kidneys is more than 15 miles, although the weight of each is but about four ounces. The entire drainage surface of these capillaries is said to be more than 11,000 square feet. The kidneys are the shortest lived organs of the body. An over supply of food doubles their work and causes them to burn out their tissues very rapidly. When the kidneys and the liver are overworked, the poisons that should be eliminated, circulate through the system, poisoning the cell life and laying the foundation for disease.

### THE SKIN

The skin is another important factor in the elimination of the poisonous and waste matter of the body. The 17 pounds weight of the skin is competent to hold half the entire blood supply of the body. There are 3,000,000 pores on the surface of the body for the elimination of the poisonous and waste matter that must be eliminated through the skin. The combined length of the sweat glands emptying through these pores is said to be more than 15 miles. This sewage system of the body must be kept open for the elimination of these poisons. The purpose of this book is to show how these eliminating organs may be kept in perfect condition for the elimination of this poisonous matter. To show how the pores of the skin may be kept open by the friction bath, the sweat bath, the air bath, the sun bath and the hot and cold water bath so that there may be perfect elimination through the skin.

The elimination of the waste matter from the stomach, the intestines and the colon, or waste basket of the system, is also an important factor in the care of the body. The grinding of the food in the stomach, and its dissolution from the action of the saliva, the gastric juices, and the pancreatic and intestinal juices, so that the 10,000,000 suction pumps of the membrane of the small intestines may absorb the food supply into the circulatory system, carrying it to every cell of the body for strength and nourishment, is also an important study. The purpose of the book is to teach us the proper care of all these eliminating organs, so that they may be kept in prime condition for the perfect elimination of all these poisons from the body.

### EXERCISE

The stagnant pool is a deadly pool. All organs of the body must have activity or they lose the power to perform their functions. The purpose of this book is to furnish exercise for every tissue, nerve, muscle, bone and brain cell so that they may be healthful and properly perform their functions. Systematic exercise, not for muscle building, but for health, is an imperative demand upon each individual. Millions are denied the privilege of ''Nature's great out-of-doors,'' where they may find their exercise, by roaming the fields, climbing the hills, threading the canyons, scaling the mountain heights, tramping the beach sands, or battling with the ocean waves. These persons must have their exercise, though denied these romantic pleasures, with all their charm and fascination. Man was never intended for a hot house plant; he must have exercise to keep his body in a healthful condition. When denied the more romantic out door sports they may yet be able to find the healthful exercise of running, walking, chopping wood or spading the soil. Yet to millions even this diversion is an impossibility.

### BEDROOM GYMNASIUM

The purpose of this book is to teach the individual how to transform his bedroom into an athletic field, a race course and a gymnasium. To teach them how to make out of their own body the most effective and efficient gymnasium the world has ever produced, one which for health purposes surpasses in efficiency any million dollar gymnasium ever constructed. This gymnasium and athletic field is always at your disposal. The strenuous life, the pressure of business, the unexpected imperative call, the society function, all are powerless to rob you of the privileges of this athletic field and efficient gymnasium.

The time allotted to this exercise is absolutely at your own command, no matter what your position may be. The first fifteen minutes after rising in the morning and the last ten minutes before retiring at night, will furnish you with sufficient exercise to guarantee the preservation of the normal health of the body.

The purpose of this book is to teach you a system of practical exercises that will furnish sufficient activity for every tissue, every nerve, every muscle, every tendon, and every organ of the body, and every brain cell, so that the body will be preserved in normal health. These exercises will also aid in the preservation of a healthful condition of the eliminating organs of the system, so that all poisonous matter may be eliminated through the proper channels.

These exercises will become a real fascination and may be participated in by the whole family, from the tiny tot to the senior who may have passed his four score years. More than half the ills of life come from lack of exercise and the stagnation of the body. The teaching that we should abandon our exercises after we have reached 30 years of age, has been most pernicious in its effect. The exercise should be of a less strenuous nature, but it is more imperative after thirty than before, for the preservation of the health of the body. Let no man take your crown of physical strength and health by robbing you of your necessary exercise.

## BATHING

Few hygienic principles for the care of the body are more sadly neglected than bathing. Modern civilization, with all the burden of heavy clothing forced upon us renders imperative the necessity for the bath. Think of three million sewers emptying their poisons on the surface of the body through the pores of the skin, remembering that the combined length of these sewers, or sweat glands, is more than 30 miles, and yet furnishing the body a bath for the elimination of all this poisonous matter only once a week, or once a month. More than this there are millions of skin cells that die daily on the outer surface of the body and these unburied corpses mingle with the poisons eliminated from the pores of the skin add to the accumulated filth of the body aside from the natural accumulation of dirt. Is it any wonder that the body becomes unsanitary and a breeding place for the unfriendly disease germs?

### THE BATH A HEALTH RESTORER

The bath is one of Nature's greatest health restorers and preservers. Birds and beasts, from the humming bird to the elephant that roams the jungle, revel in the luxury of the bath, even the hog with all his filthiness wallows with delight in his mud bath. Man, who needs it most because of his super-abundant clothing, and because of the delicate nature of the skin, seems least to appreciate the real, genuine luxury of the bath. The New Health Conscience demands the recognition of the real needs of the body from a hygienic standpoint. Proper bathing means not merely the water bath, important as this may be, it means a series of baths that shall preserve the whole body in normal health.

It means the friction bath with rough towel or brush, that shall remove the dead cells from the outer skin and bring a glow of health from the rush of blood through the capillaries to the outer skin. It means the sweat bath two or three times per week, so that the pores of the body may be properly opened for the elimination of poisonous and waste matter of the body. It means the hot water bath for cleansing and the cold water bath for tonic. It means the sun bath for forcing the circulation of the blood to the skin, and the air bath to temper the body to the chill and the cold. It sounds beautiful in the ritualistic service to declare: "He tempereth the wind to the shorn lamb," but the real fact in the case is, He tempereth the shorn lamb to the wind. It means the sand bath and the ocean bath where the individual may battle with the waves, and where he may have that happy combination of the water bath, the sun bath, the air bath, and the friction bath all in one. Happy is the man whose lot is cast near the rolling sea and the mighty ocean, with its breakers and dashing billows, to offer its charm and enchantment of the ocean bath. Yet thousands dwell upon its border and never enjoy the health giving luxury of the ocean bath. The purpose of this book is to so emphasize the relation of the various baths to the health of the body, that they may become not only a pleasure and a luxury, but that we may regard them as among the absolute necessities of life. The bath is of vital importance in the health of the human body.

### MIND AND BODY

The real principles of psychology and the power of the mind over the body is as yet but in its infancy. The influence of the mind over the body is far greater than many are willing to admit. The happiness of the mind and the health of the body are very closely identified. Many eminent scientists have declared that 75% of the diseases of the body are imaginary diseases, or diseases of the mind. The power of the mind over the body will be noticed later on in digestion. Suffice it to state here that anger, hatred, malice, fear, grief and disappointment have a powerful influence over the digestive organs. These will stop the flow of the saliva, the gastric juices and the pancreatic and intestinal juices so that digestion is impossible. The individual who believes he has swallowed a fly may join the company of the sea-sick throng on the ocean liner, and heave-to as well as his companions. The effect is the same as though he had actually swallowed half a dozen flies. Many individuals have contracted diseases by forcing the mind to believe they were already afflicted with it. A picture of health and sunshine in the human mind, a cheerful and happy disposition, an optimistic vision, harmony with God and man, is a recipe for health.

### HEALTH MORE CONTAGIOUS THAN DISEASE

*"Know ye not that ye are the temple of God?"*
*"Know ye not that your body is the temple of the Holy Ghost?"*
*"If any man defile the temple of God, him will God destroy."*
*"I keep my body under and bring it into subjection."*
—PAUL. *Corinthians.*

Man was created for fellowship with his Creator. It is impossible for him to enjoy the highest privileges of health without being in tune with the Infinite. God has made every provision for the health and happiness of the race. He has provided for the maintenance of the normal health of the body. He has made health more contagious than disease if we will but care for the body entrusted to our keeping. He has furnished us with all the miraculous provisions of the human form. The cell, the tissue, the nerve, the muscle, the bone; the kidneys, the liver, the stomach, the heart; transcending all of these he has given us the marvel of the human brain, with its power over the body.

The New Health Conscience teaches us the demands of the body for a rational food supply; the demands of the body for an adequate supply of oxygen to purify the blood; the demands of the body for the care of the eliminating organs; the demands of the body for the care of the skin by the various baths; the demands of the body for a rational systematic exercise for every organ of the body. All of these demands presented that we might preserve the body in normal health. Above all of these is the power of the mind over the body, not only forcing subjection of the body to the principles of health and carrying out the observance of the laws of nature, but the power of the mind over disease itself, so that by the ideals of health, a cheerful sunny disposition, and an optimistic vision, even disease may be chased from its favored haunts, and all imaginary ill may be put to flight. Harmony with the Infinite is one of the great secrets of health.

*"One ship sails East and another sails West*
*In the very same winds that blow.*
*'Tis the set of the sails and not the gales*
*Which determines the way each shall go."*

# THE NEW HEALTH CONSCIENCE

The world's heroes, and epoch makers of the ages in every realm of thought and activity, are the product of birth, genius, environment and opportunity. A few men have been the epoch makers of the ages, a few men have been the empire builders of the world. These world heroes have carved out the nations in the realm of state, or on the field of battle. They have set up meets and bounds that no man dare molest, and no nation dare alter.

In the realm of thought a few men have done the thinking for the race. The masses prefer to think and travel in the beaten paths. You can count the masters in the realm of thought and science on the fingers of a single hand. In the realm of astronomy, a few men have mapped out the heavens, called by names the planets, stars and suns and set them in groups, families and constellations. These men have revealed their times and seasons, and fathomed their mysteries as far as it is possible for the finite to fathom the myteries of the Infinite.

## BOTANY

You do not need the fingers of a single hand to enumerate the masters in the realm of botany. Countless millions of the past and present trample God's flowers under their feet, unmindful of their wealth of color, surpassing all the tints of the rainbow, unmindful of their exquisite beauty, surpassing that of the rarest gem, unmindful of their sweetest perfume, richer than the ambrosia of the gods; more than this, unmindful of God's law written in the flower, as unerring as the law by which he holds the planets in their course, and guides the suns and stars and nebula in their paths through the heavens. So perfect are these laws in the flower that it matters not whether the botanist has plucked them from shaded dell, fertile valley, arid plain, desert waste, mountain slope or Alpine summit, he is able to classify them by stem, leaf, and bract; by petal, stamen, style and pistil, so that he may group them into classes, families, and orders, calling each by its individual name.

### GEOLOGY

In the realm of Geology, thousands have blasted the granite, sledged the limestone and chiseled the marble, that they might build monuments and pyramids, palaces and cathedrals, to dazzle the world with their pomp, their magnificence and their splendor. Thousands more have tunneled the mountains, and delved deep in the sands of desert waste and fertile valley for the coal, the oil, the iron, the copper, the gold and the diamonds; that they might turn them into the mighty streams of the world's commerce. It was left for a trinity of master minds to discover God's law in the strata of the rocks, and give to the world the science of geology, whereby man might turn the pages of the strata of the rocks, as the pages of an open book, tracing the footprints of the Creator through all the ages of the past.

### LITERATURE AND ART

Literature has few real masters, the poetry of the ages, the real genuine poetry, has been sung by a few bards who were real masters. These genuine bards are scattered sparingly through the centuries. The great masters of literature are so few and scattered so widely through all the centuries of the past, and so far transcend their fellows in brilliancy, that their light is as the light of the noonday Sun as compared with the dim stars of the twilight.

The masters in the realm of art are as few as the empire builders of the world. A few men have been endowed with the genius of art; under a transcendent inspiration they have caught visions and transferred them to the canvas, and have made themselves masters in the realm of art. Their masterpieces have been the shadows of great ideals. It is significant that these masters of art have drawn their ideals and inspiration from the revelation of God as revealed in Jesus Christ or from the revelation of God as revealed in Nature. The world's masterpieces of art reveal God in Jesus Christ, or God in Nature.

This brief survey reveals the fact that the master minds of the ages are born, not made. They are neither the product of chance nor environment. These may add to their prestige and power, but the real epoch maker is born. Cell and nerve, muscle, blood and brain have been climbing from the valley, the plain and the mountain slope to the dizzy heights of Himalaya summit, until the finished product of genius is the result. Environment and opportunity have been the co-workers with birth and genius in producing the world's great masters and their masterpieces. The great movements of the ages have been the product of a few master minds. An ideal is created in the mind of genius, the intellect supported by the will climbs upward until the ideal is realized, and wrought out for the uplift of humanity.

### HOMER'S IDEAL

When the blind bard, Homer, began to sing of his hero, Achilles, there was not such a hero, not such an ideal in all the Grecian world, outside the mind of Homer. He continued to sing of Achilles on the street, in the markets, on the highways, and in their groves. Homer held his ideal before the Greek mind from youth to age. While there was not such an ideal incarnate, in all the land of Greece save in the mind of the blind bard Homer, he continued to sing, the nation took up the refrain, the world knows the result. The time soon came when there were 40,000 Achilles marching through the streets of Athens. Alexander made them the conquerors of the world.

### IDEALS IMPERATIVE

The individual, the city, the state, the nation, can not rise higher than the source of their ideals. Every epoch of history, every evolution of government, every advancement of science, every triumph of intellect is the product of an incarnate ideal. They grow like our palaces and great cathedrals, which are first conceived in the mind, then transferred to paper, and are finally wrought out in stone, granite, marble and bronze. In studying the achievements of the great master builders of the ages, we are not unmindful of the marvelous service rendered humanity by the men who have not climbed to such dizzy heights. Their sphere has been circumscribed by the age in which they lived, and the land in which they dwelt. Many of them have been possessed of a brilliancy and genius far beyond their achievement.

*"Full many a gem of purest ray serene*
*The dark unfathomed caves of ocean bear,*
*Full many a flower is born to blush unseen,*
*And waste its sweetness on the desert air."*
—Thomas Gray, *Gray's Elegy.*

### THE NEW RELIGIOUS CONSCIENCE

A glimpse backward over the great movements of the past, their marvelous development and growth, will give us a foreglance of the marvelous possibilities in the development of a New Health Conscience.

In the early annals of the race when men drifted away from God and became vile in their thoughts, and so pernicious in their ways that they lost their ideals of morality, ethics, religion and of God himself, and became so debased through lust and passion that, "It repented God that he had made man," God gave to the world through Moses a New Religious Conscience. Moses was the ideal character who could bring a new religious conscience to the Chosen People and the world. The great historian of his age and of all ages. The statesman of the ancient world. The lawgiver of the race. The master of ethics. The prince of teachers. This man of God gave to the world a New Religious Conscience. It was quickened by such men as Isaiah, David, and Solomon. In Jesus Christ it was lifted into a new life and was given a new birth. Its mighty power was shown in the transformation of Saul of Tarsus into Paul the apostle. The cause has been championed by such mighty leaders as Paul, Luther, Wesley, Moody and Billy Sunday. It is today shaking benighted India, enlightening darkest Africa, it has quickened the old empire of Japan into new life, it has broken the fetters of old China and awakened her from the slumbers of centuries; she is awakening as a Christian nation with a new civilization. The New Religious Conscience has revolutionized the civilization of the whole world and has wrought out a new humanity.

*"I know not where His islands lift*
*Their fronded palms in air;*
*I only know I can not drift*
*Beyond His love and care."*
—WHITTIER.

### THE NEW LIBERTY CONSCIENCE

When tyranny and oppression became intolerable, when the iron heel of Royalty was crushing out the very life blood of her citizens, there came a travail of soul out of which was born a New Liberty Conscience. The birth came at Runneymeade when the English Barons wrung from King John the "Magna Charta." The New Liberty Conscience demanded and obtained the English Parliament. It transplanted the Pilgrim Fathers to Plymouth Rock and bared their breasts and their foreheads to the tomahawk of the savage. It created the heroes of Lexington, Concord and Bunker Hill. It gave to America and the world the Declaration of Independence, the Constitution of the United States and the Emancipation Proclamation. It created "Old

Glory'' with her stars and stripes waving liberty and freedom not only to her own people, breaking the shackles from more than 7,000,000 slaves, but it unfurled the emblem of liberty to millions yet unborn in our own nation and the nations of the earth. It made our own nation ''The land of the free, and the home of the brave'' and made us the guardian angel of the liberties of the oppressed of the whole earth.

## THE NEW TEMPERANCE CONSCIENCE

Time was when the world sat in Egyptian darkness on the liquor problem. This curse of humanity stalked abroad through our land at midnight and at high noon. He laid his slimy fingers of pollution, degradation and death, upon our young men and maidens, upon the flower of our manhood and womanhood and upon age tottering to the grave. All were counted his legitimate prey. He counted his victims by legions. There was none to successfully combat this hydra headed monster. The Temperance Conscience of the individual, the city, the state, the church and the nation had been lullabyed to sleep. Darkness reigned. Poverty supplanted wealth in the home of the drunkard. Comfortable apparel gave way to rags. Hunger gnawed at the vitals of the helpless wife and the innocent children in the homes of the drunkard. Pictures vanished from the walls, clothing from the wardrobes, furniture from the home, carpets from the floors. Pangs and heartaches, mental agony and soul hunger, suffering, sorrow, grief and anguish deeper than any pangs ever wrought by death, became the heritage of the helpless mother and children. Shall the darkness never end? Is there no dawn to this long, long night of Egyptian darkness? Is there no relief for the helpless wife and the innocent children of the poor drunkard who has wrecked soul and body, nerve and brain, intellect and will by the curse of strong drink? Yes, there is relief. A New Temperance Conscience is about to spring into life. Over the mountain summits of ignorance, lethargy, blindness and indifference, I catch a faint gleam of light; it is the breaking of the dawn of a new day. It is the Birth of a New Temperance Conscience.

Yonder in Ohio I see a band of heroic, Godly women, "The Woman's Crusade," pleading at the gates of heaven and at the door of the open saloon, until the stony heart of the saloon keeper is melted, and his liquor courses down the gutters of city streets, rather than down the throats of boys and men, transforming them into demons. This to my mind was the birth of the New Temperance Conscience. The Woman's Christian Temperance Union in their heroic work for "God and home and native land" aided the work. The Good Templars, the Prohibition party, the Democratic party in the South and the Republican party in many states of the North furthered the cause. The giant organization of the Anti-Saloon League welded and unified the various temperance organizations for an aggressive warfare against their deadly enemy, the open saloon. The result is the mighty tidal wave of temperance sweeping the nation from the Atlantic to the Pacific and from the Lakes to the Gulf. Saloons are being wiped out by the thousands. Fifteen thousand were closed in 1908. Forty per day or 15,000 more in 1909. In 1910, 15,000 saloons closed their doors never to open again. In 1913 in a single day 3300 saloons in Ohio alone closed their doors forever. Already 70% of the area of the United States is under the "Dry Flag" as a result of the work of "The New Temperance Conscience." In the not far distant future the people of the United States will arise in their might and send out to the world a new Declaration of Independence, proclaiming "The United States of America can be, and if right ought to be forever free from the curse of strong drink and the liquor traffic. Therefore, we, the people of these United States, do hereby decree by amendment to our constitution, that it shall forever be unlawful to manufacture, sell or give away, intoxicating liquors as a beverage. Congress may fix such penalties as are necessary for the enforcement of this amendment.'' This will be the ultimate result of the New Temperance Conscience.

*''Careless seems the great Avenger;*
*History's pages but record*
*One death grapple in the darkness*
*'Twixt old systems and the Word;*
*Truth forever on the scaffold,*
*Wrong forever on the throne—*
*Yet that scaffold sways the future,*
*And behind the dim unknown,*
*Standeth God within the shadow,*
*Keeping watch above his own.''*
—James Russell Lowell, *Present Crisis.*

### THE NEW RIGHTEOUS CONSCIENCE

The past decade has witnessed the creation of a new righteous conscience. It has probed graft, corruption, and theft in our civic and municipal life; in our giant trusts and corporations; in our state officials and in our legislatures; in our national boards and commissions; even our United States Government officials have not been able to escape its probing. It unearthed corruption in some of our great insurance companies. It revealed the unsanitary and criminal conditions of the beef trust. It laid bare the theft and graft of some state institutions. It lifted mayors from their chairs in three great Pacific Coast cities, one by conviction and two by recall. It dethroned political bosses in many states and cities. It caused a cleavage in political parties and placed five Democratic governors over Republican commonwealths. It retired scores of congressmen who for years had misrepresented their constituency. It retired a Republican President of the United States and placed a Democrat in the chair of the chief executive of the nation. We do not cast reflection on the individual candidates, but call attention to the independent voter created by the New Righteous Conscience. They smashed city and state political machines. This means the dawn of a new day in city, state and national politics. It means the choice of men on merit, rather than party lines. It sounds the death knell of the political boss and forces a reckoning with the independent voter. It means the people demand the right to choose their leaders, and the right to recall them when they fail to represent their constituency.

## THE NEW HEALTH CONSCITNCE

This brief survey of the great movements touching humanity leads to the chief consideration of this book, "The New Health Conscience." By the new health conscience we mean that intense interest created during the past quarter of a century, and marvelously quickened in the last decade, among the great scientists of the world, as to the care of the human body. The New Health Conscience means the awakening of the whole world to the better care of the human body, so fearfully and wonderfully made, and so marvelously equipped for self preservation when properly cared for. It means the enforcement and observance of the laws of sanitary science and a public sentiment that will demand the enactment of new sanitary laws where they do not exist.

The New Health Conscience is already demanding an investigation of our food supply both as to sanitation and adulteration. It has eliminated many injurious and poisonous nostrums from our medicines. It is drawing the mantle of law around the cold storage plant. It is forcing the government to provide sanitary protection for our water supply in our rivers and lakes and demanding that their pollution by sewage shall forever cease. It is forcing great campaigns for the preservation of health by the destruction of the disease laden rodent, and that deadlier scavenger, the common house fly. It is forcing the destruction of the mosquito with his malignant malaria infection. Through sanitation it is stamping out typhoid and yellow fever and the Black Plague, and robbing death of its prey in the very haunts of these dread diseases—New Orleans, Havana and Panama. It is furnishing us a more sanitary milk supply by forcing the destruction of millions of disease germs before it is delivered at our doors. It is furnishing us protection from tainted and poisoned meats and guarding with eternal vigil our entire food supply.

### PREVENTION OF DISEASE

Under the New Health Conscience prevention of disease, rather than cure, has become the watchword. It seeks to furnish the individual not only a trained intellect but a health education as well. It teaches man that he must not only know how to care for his horses and cattle, his sheep and hogs and chickens, but he must learn to care for his own body and the bodies of the children entrusted to his care.

Prevention being the dominant note under the New Health Conscience it means inevitably, the better housing of the poor. It means the destruction of the old rookeries in the congested centers of our great cities, and the condemnation of all unsanitary buildings where the poor are housed. It will demand the construction of modern, sanitary apartments, with abundance of fresh air, free shower baths, and roof gardens where the occupants may have a glimpse of sunshine even though they must dwell in the heart of the great cities, and where the mother may have a moment's surcease from her narrow vision of four dingy walls, that she may gather a ray of sunshine to impart to her children. These accommodations must be provided at moderate cost which shall be regulated by law.

### PUBLIC PARKS

The New Health Conscience will demand broader areas for our public parks, with no signs "Keep off the Grass." These parks must be provided with shower baths and with plunge baths maintained by the municipality, which shall furnish free tickets to the destitute, and provide accommodations for the poor at a cost of from one cent to ten cents, and at a little higher cost to the general public. Detroit has already solved this problem by her municipal baths in the Belle Isle Park, one of the finest pleasure grounds in the United States. In 1910 they were given about 7000 baths daily and were expecting to double the capacity the following year. Public drinking fountains must be scattered throughout our parks and in the congested portions of our cities; these must be sanitary. The public drinking cup must be prohibited by law in all public places.

Public Comfort Stations, reading rooms, and rest rooms must be provided in all congested sections. Free medical service should be rendered to the poor by regular government physicians.

### CARE OF THE CHILDREN

The New Health Conscience will demand the scientific care of the babe from conception to birth, and from birth to five years of age. It will carry us back beyond the conception of the babe, for it will involve the whole problem of eugenics, and marriage licenses will be issued only to those holding a certificate of health showing them free from secret contagious diseases. The infanticide of our own nation with a death rate of 50% prior to the age of five years, is almost as inhuman as was the infanticide of India, when they consigned millions of innocent babes to their towers awaiting their awful death. The fearful death roll of 200,000 helpless infants annually from preventable causes is an awful commentary of criminal negligence on the part of the American people. It is but little less inhuman than ''Herod's Slaughter of Innocents.'' Criminal negligence is our only excuse.

### INTERVENTION OF LAW

The New Health Conscience means the salvation of the child physically, and its enforced protection by law where necessary. It demands the scientific protection of the eyes and the ears of the babe from birth to high school graduation; also the scientific government care and protection of the teeth during the same period. The teeth of the child are more valuable than pearls, rubies or diamonds, when considered from a health standpoint. The New Health Conscience will demand the scientific feeding of the child from birth to high school graduation. The ultimate goal will be sanitary, hygienic meals in our Grammar and High schools for all our pupils, at government expense. Germany has already adopted this system, and government reports declare it to be one of their best investments.

## HEALTH CULTURE IN PUBLIC SCHOOLS

The New Health Conscience demands a sane, common-sense, scientific system of health culture in our public schools. This system should not supplant their present athletic system, but should be a distinct department, to teach the real scientific principles of body building. It should include a thorough system of breathing for the complete development of the lungs, so as to furnish sufficient oxygen for the blood and the feeding of the cell life; it should also present the scientific principles for the elimination of the poisonous carbonic acid gas from the lungs and the entire system. The fact that 400,000 die annually from pulmonary diseases, the vast majority of cases being preventable, is sufficient emphasis for this point.

## BATHING

Our public schools must also teach the scientific principles of bathing, for the health and preservation of the body, especially for the protection of the lungs, so that the body may be rendered immune from colds, catarrh, la grippe and pneumonia, all classed by our leading scientists as preventable diseases. This instruction must include the sun bath, the air bath, the friction bath, the sweat bath, the hot and cold water bath. Our schools must be provided with ample accommodations in shower baths, so that every pupil may be accommodated at least three times per week.

This health education must also include scientific systems of exercise that will furnish activity for every cell, every nerve, every muscle, and every organ of the whole body.

### STUDY OF FOODS

It must also include a comprehensive study of foods and food values with scientific instruction concerning diet. Every child should be taught the proper combinations of food, so that they may avoid those dangerous combinations resulting so disastrously to child life, often proving fatal in final results. The child should also be taught the necessary amount of food required to sustain the body, so that it may not be the victim of malnutrition either from starvation, or from auto-intoxication caused by a surplus amount of food.

When we have thus safeguarded the physical condition of the child as demanded by the New Health Conscience, its brain power will be increased at least 100%. It will then be easy for the student to perform his allotted task We will no longer lose 200,000 students annually from our High schools, for the majority of this number drop out because of discouragement. The dull child is a sick child. The body is improperly nourished, and the brain naturally impoverished.

> *"Auspicious Health appear'd on zephyr's wing;*
> *She seemed a cherub most divinely bright,*
> *More soft than air, than blushing morning light.*
> *Hail, blooming goddess, thou propitious power,*
> *Whose blessings mortals next to life implore.*
> *With so much luster your bright looks endear,*
> *That cottages are courts when these appear.*
> *Mankind, as you vouchsafe to smile or frown,*
> *Finds ease in chains, or anguish in a crown."*
>
> —SAMUEL GARTH.

### PRESENT ACHIEVEMENTS

The conception and birth of the New Health Conscience has long since taken place. It has survived the deadly assaults through which great movements must pass during their infancy. It is now a rugged youth, battling its way to sturdy manhood, with the eyes of the whole world fastened upon it. The admirers and votaries are the chief men of science, men of letters, some of the masters in the realm of medicine, and a few masters in the realm of state. The pioneers who have championed the cause of the New Health Conscience, have been forced to wage bitter warfare against public opinion, private prejudices, and professional prestige, to which small men cling so tenaciously, because of that hideous monster, personal interests. Some of these heroes who have dared to champion this cause have been made living martyrs, but they had the courage to pay the price in the interest of suffering humanity. Many of our heroic physicians, in the face of all personal interests, knowing that every step in the prevention of disease means less practice for the physician, have utterly ignored personal interests, and in the interest of our common humanity, have become the great masters in the prevention of disease. Such men deserve a worthy place among the heroes. They have caught a broader vision of the possibilities of their profession, and a broader vision of the needs of suffering humanity, and have boldly entered the open door. They have recognized that great principle that,

*"New occasions teach new duties,*
*Time makes ancient good uncouth;*
*They must upward still and onward,*
*Who would keep abreast the Truth.*
*Lo, before us gleam her campfires!*
*We ourselves must Pilgrims be.*
*Launch our Mayflower, and steer boldly*
*Through the desperate winter sea,*

*Nor attempt the Future's portal*
*With the past's blood-rusted key."*
—James Russell Lowell, *Present Crisis.*

### STEPS OF PROGRESS

The development of the New Health Conscience has been marked with a few giant treads which should be noted in passing, conscious of the fact that many important steps must be omitted. We must ever bear in mind the fact, that before the days of Aesculapius and Hypocrates the Greeks had their Gymnasiums for the training of the body. Exercise, which is one of the great factors in modern health culture, antedates the science of medicine.

Harvey gave us the principle of the circulation of the blood, thus laying the foundation for a new era in the treatment of disease. Malpighi and Grew discovered the principle of the cell life of the body, which wrought a revolution in the care of the body and the practice of medicine. Boerhaave gave us the science of physiology so that we might comprehend the various organs of the body and their relation to each other. Hahnemann gave us Homeopathy with its standing effective protest against strong medicine in large doses. His principles have revolutionized the entire practice of medicine, and have become a priceless boon to suffering humanity. Another of his great principles was his effective protest against the common practice of bleeding the patient, which has been abandoned in all treatment of patients. Jenner discovered vaccination, which robbed smallpox of its terror and fearful toll of death. Laennec invented the stethoscope, revolutionizing the diagnosis of disease. Virchow gave us cellular pathology. Pasteur revealed the principles of fermentation and putrifaction, thus laying the foundation for the germ theory of disease, and made possible the discovery of Antiseptics by Lister, which wrought a revolution in the practice of surgery. Koch discovered the bacillus of tuberculosis, thus opening up the great field for the assaults of scientists against the "Great White Plague," with its awful roll of death, more than that of war, pestilence and famine combined. Morton gave us ether and Simpson gave us chloroform, once more revolutionizing the practice of surgery, silencing pain under the surgeon's knife, and making life possible to thousands, upon whom death had already laid his mailed hand. Koller added Cocaine as a local anæsthetic for minor operations.

### ANTI-TOXINES

Then followed the long list of Anti-toxines, by which the most deadly maladies were robbed of their terror, and millions have been snatched from the jaws of death. Among some of the most deadly scourges yielding to anti-toxines, we have bubonic plague, yellow fever, tuberculosis, typhoid fever, diphtheria, pneumonia and hydrophobia, as well as the bites of the deadly serpents.

The New Health Conscience has also discovered the ravages of the hook-worm, the sleep of death wrought by the bite of the Tsetse fly, the malignant fevers wrought by the bite of the poisonous mosquito and the deadly disease germs scattered broadcast by that deadly scavenger, the common house-fly. The discovery of the Roentgen Ray has meant more to the physician than the discovery of the telescope meant to the astronomer, or the microscope to the scientist.

### MODERN HEALTH EXPLORERS

The New Health Conscience has still another field in which the modern health explorer has made many valuable discoveries. These modern health discoverers and explorers have demonstrated the fact that the Infinite created these bodies for health, and not for disease. They have demonstrated the fact that health is the normal condition of the body. That disease is an accident. That health is more contagious than disease. That disease is the result of ignorance, base neglect, and criminal abuse of the body. They have demonstrated that a normal, healthy body possesses sufficient anti-toxine for the destruction of all malignant germs. The modern health culturists are striving to produce this normal, healthful body. With prevention as the dominant note the New Health Conscience is striving for this ideal. There are five great cardinal points through which they hope to achieve the normal condition of the body—health—so that it may be armor proof against all the assaults of the deadly disease germ.

### CARDINAL POINTS

The five cardinal points through which the modern health culturist hopes to produce the normal, healthful body are:

*FIRST, BREATHING*—So as to produce the full development of the lungs, and furnish sufficient oxygen to purify the blood, and to feed the cell life, and also fully eliminate the poisonous carbonic acid gas from the system.

*SECOND, BATHING*—Producing absolute cleansing of the body and tempering it by the temperature of the water, so that it will not be susceptible to cold, drafts, or changes in temperature. This will require the air bath, the sun bath, the friction bath, the hot and cold water bath, and on special occasions, the internal bath. These may be so used as to render the body immune from colds, catarrh, la grippe, and pneumonia.

*THIRD, DIET*—Food and food values constitute one of the great problems in health culture. We literally dig our graves with our teeth. The over-eating of the American people and the wrong combinations of food is the cause of literally millions of deaths. Diet is the word of emphasis for the New Health Conscience.

*FOURTH, EXERCSE*—A stagnant pool is an unhealthy pool. A stagnant body is necessarily an unhealthy body. Modern health culture demands an exercise that will touch every cell, every nerve, every muscle and every organ of the whole body. Activity is life. Sluggishness is death.

*FIFTH, MIND*—The attitude of the mind wields a powerful influence over the organs of the body. Optimism and cheerfulness wield a mighty power for good. Pessimism and moroseness blight our whole being. Auto suggestion is a mighty factor in the mind. Pleasurable emotions quicken life. They increase respiration, accelerate the heart beat, and stimulate the whole body. Fear, anger, and hatred paralyze the nerve centers, suspend nutrition, retard the heart beats, and force the system to generate toxines that poison the whole system. Would you demonstrate the power of auto-suggestion? Imagine while you are eating, that you have swallowed a fly. Fear in the mind makes the body a prey to disease and death.

## PIONEERS

Some of the pioneers among our modern health explorers are especially worthy of mention because of their great service to humanity. Metchnikoff, director of the Pasteur Institute of Paris, is acknowledged as a world authority. Russell H. Chittenden, Irving Fisher, Horace Fletcher, George Newman, W. O. Atwater, Upton Sinclair, Bernard Mcfaden, William S. Sadler, W. G. Thomson, Kellogg and Willey all have contributed to the creation of the New Health Conscience. The pages of this book will be devoted to the promotion of these principles in the interests of Humanity, especially those who have suffered intensely by their violation.

# BREATHING

I have given an outline of the principles of the New Health Conscience. I have given my own experience and what this system of health culture has done for my own restoration to health after a complete physical and nervous breakdown. I have also given an outline of what it did for a boy fourteen to nineteen years of age. I have outlined at some length the revolution wrought in his physical and mental condition in the course of five years, as he placed in practice some of the principles of the care of the body advocated by the New Health Conscience.

I shall now present an outline of the system of health culture that made possible these transformations. While the outline will be brief it will be sufficiently comprehensive to give to any intelligent person a complete health education, that will enable them to preserve the body in normal health. This outline will contemplate the care of the body along five distinct lines. They are Breathing, Bathing, Exercise, Diet and Auto Suggestion or the power of the mind over the body. The cuts for demonstration will carry their own explanation.

## FRESH AIR

*"This pure air*
*Braces the listless nerves, and warms the blood*
*I feel in freedom here."*

Breathing is one of the most important functions of the body, also one of the most sadly neglected. We can live weeks without food, days without water, but only moments without air. Air is the freeist commodity on which the body must feed. The breathing act is more sadly neglected than any other. In fact, breathing is a lost art. Many persons are literally starving for sufficient oxygen. In order to more fully comprehend the importance of perfect breathing we will pause for a moment to examine the structure of the lungs.

### THE LUNGS

The lungs have a marvelous provision for the maintenance of health, and for rendering health rather than disease contagious. They are provided with 2000 square feet of surface. They are filled with 725,000,000 air sacs, through which the blood receives a fresh supply of oxygen, and out of which passes the carbonic acid gas. So delicate is the membrane of these terminal air sacs that the oxygen and the carbonic acid gas filter through them as smoke filters through a lace curtain.

### LUNG CAPACITY

The capacity of the ordinary lung is about 350 cubic inches of air. One hundred cubic inches is constantly retained in the lungs; 100 cubic inches can be forced out of the lungs but seldom is, as it requires a special effort to remove it. By the ordinary breath, or tidal breath, the average person inhales but about 50 cubic inches of air, while some women live on as low as 30 inches for each tidal breath. This leaves an ordinary lung capacity of about 100 inches more that should be inhaled by special effort, but which seldom is. The average man breathes into the lungs but one-half their full capacity, while the average woman breathes in but little more than one-fourth the natural capacity.

We should breathe in at least 100 cubic inches of tidal air to furnish sufficient oxygen to purify the blood and to feed the cell life. Two hundred cubic inches of air will remain in our lungs until forced out by our air pumps, which are our chest muscles and those of the abdominal walls. These can pump out another 100 cubic inches, then the lungs may have a full supply of fresh air. The traffic in the air sacs, exchanging oxygen for carbonic acid gas, is normal. The air pressure forces the oxygen through the walls of the air sacs, while the blood pressure forces the carbonic acid gas through the same walls, as smoke filters through a net curtain. The millions of red blood corpuscles carry this oxygen to every part of the body, it becomes the fuel of the vital fires of life in tissue, muscle, nerve, bone, and brain cell, for the generation of heat and energy.

### OXIDATION

Oxidation is the burning or combustion of the nutrients in the body by contact with the oxygen carried through the 2000 miles of the blood stream by the red blood corpuscles. This oxidation generates the heat and energy for the body. The muscles of the body oxidize very rapidly when in strenuous exercise, this generates more carbonic acid gas than is eliminated from the muscles; this causes fatigue and subequent soreness of the muscles. The tissues of the body are continually oxidizing, and continually generating carbonic acid gas. If the breath is retained for a short time in the body it will be found to contain at least 10% more carbonic acid gas, when exhaled from the body. Violent exercises increases the amount of carbonic acid gas 20% in the exhaled breath.

The purification of the blood stream of the body by the action of the oxygen of the lungs, and the action of the liver and the kidneys is as marvelous as would be the instantaneous transition of sewage into crystal pure drinking water. While these provisions are so perfect for the elimination of all poisonous matter from the blood, through neglect, ignorance and wilful violation of the laws of breathing one person in every three you meet will die of some form of pulmonary disease. The oxygen breathed into the lungs, if furnished in sufficient quantities, will change the black blood of the veins, poisoned with the ash and the clinkers of waste and broken down cells of nerve, muscle, bone and brain, into the red blood of health and vigor. It is one of the crimes of the century that more than 400,000 die annually from pulmonary diseases, when our bodies are armor clad against these diseases, were we but to give them normal care and a generous supply of oxygen. Many of these diseases are contracted because the blood has been poisoned by the ashes of the burned tissues and broken down cells, of nerve, muscle, bone and brain, and from the fumes and poisonous gases of decomposing food, in the stomach and bowels, taken in abnormal quantities.

### BREATHING AN ART

Breathing is an art; with many individuals it is a lost art. The average man must have a lung capacity of 350 cubic inches. To get this he must have a chest expansion of at least five and one-half inches. Breathing is more than the function of a lung. It requires an act of the muscles and abdominal walls and the chest. Scientists have estimated that it requires a muscular force of 1500 pounds to give a chest expansion of 3 inches, a force of 2000 pounds to give 5½ inches, and that our strongest breathers exert a muscular force of 3000 pounds in their chest expansion. The Spirometer test shows that the normal strong lunged man has a breathing capacity of from 300 to 400 cubic inches, providing he has learned the art of breathing. This can be acquired only by the muscular manipulation of the chest and abdominal walls. Scientific breathing is an absolute necessity for health.

With air as God's free gift to man thousands are starving for oxygen. They are attempting to live on a tidal breath of from 30 to 50 cubic inches. They should have a tidal breath (natural inhalation) of from 50 to 100 cubic inches. Man inhales four times as much oxygen when asleep as when awake. He then breathes naturally. The Infinite has put some of us to sleep to prevent us from killing ourselves by our foolishness when we are awake. The body stores oxygen in sleep. The lungs are then under control of the abdominal brain. Natural breathing is always through the nostrils. The Hopi Indian mother knows more about breathing than our boasted civilization. She watches the breathing of her papoose from its birth. If it breathes through its mouth she ties a piece of cloth over its mouth and forces it to breathe through the nostrils. The breathing of the babe is abdominal breathing. Chest breathing is acquired by degeneration and neglect.

### LUNG CAPACITY

The man who is living on a lung capacity of only 200 to 250 cubic inches can not purify his blood, feed the cell life sufficient oygen, and eliminate the poisonous carbonic acid gas from the system and the lungs. He can not be a well man. He must have a lung capacity of from 250 to 350 cubic inches, many have reached 400 cubic inches. Paul Von Boeckman claims to have reached a breathing capacity of 436 cubic inches and a chest expansion of 14 inches.

Oxygen is life. It is Nature's tonic for man. Nothing else approaches its efficiency. There is no value to any food product taken into the cell life until the oxygen meets the nutrient of food in the cell and combustion, or burning, takes place, generating heat and energy for the maintenance of bodily functions, and surplus energy for work. Any normal man can develop his chest expansion to 5½ inches, if he will follow the instructions for breathing and exercise as presented in this manual. He may also obtain a lung capacity of from 250 to 350 cubic inches. Many women may achieve the same results. Every individual may secure through these breathing exercises sufficient lung capacity to furnish the body with an abundance of oxygen to purify the blood, feed the cell life and eliminate the carbonic acid gas from the system and the lungs. Result: Immunity from pulmonary diseases.

### BREATHING AND EXERCISE

Exercise increases the blood flow and the demand for oxygen. The muscles demand more oxygen and the removal of additional waste matter. Exercise forces a larger supply of oxygen by heavier breathing. Muscles at work signal the nerve centers for more fuel and power. Nerve centers signal the arteries and they are widened for a larger blood flow. The arteries signal the heart and this mighty engine throbs faster and faster, hurrying her supply of blood richly ladened with oxygen to every cell of tissue, nerve, muscle, and brain, that they may generate the necessary amount of heat and energy for the added task. General exercise of the body or hard work, no matter how strenuous, is not sufficient to furnish proper breathing capacity.

Walking and running is the best exercise known to man, but these alone will not furnish sufficient breathing capacity. The chest and abdominal walls become fixed. They will remain so unless we apply mechanical manipulation. The breathing exercises presented in this manual teach us how to manipulate the chest and abdominal walls so that they may become pliable, and respond to the efforts of the lungs for a fuller breathing capacity, so that they may furnish sufficient oxygen to purify the blood and render the body immune from disease.

### EXERCISE ALONE INSUFFICIENT

Exercise alone will not furnish a sufficient breathing capacity, and sufficiently develop the lungs, to render them immune to pulmonary diseases. Many athletes of national reputation have a lung capacity of less than 300 cubic inches, with their abnormal muscle development they should have at least a lung capacity of from 350 to 400 cubic inches. The many untimely deaths from pulmonary diseases among athletes of national reputation is conclusive evidence on this point.

Hanlon, the world's champion oarsman; Pennell (Hercules the Jap), the world's famous wrestler; Kennedy (The Strong Man), who lifted 4000 pounds in Madison Square Garden; Prof. Doud and Prof. Winship, noted physical culturists, all died of pulmonary diseases. The world's champion pugilists have shared the same fate. Joe Gans, Peter

Jackson, Dempsey, and George Dixon all died of pulmonary diseases. They developed the muscles and nerve of the body at the expense of their lung capacity. Man's body has a demand for exercise. It has an imperative demand for breathing exercise. A lung capacity of from 300 to 350 cubic inches is imperative for the individual seeking health. He must be able to expel 250 cubic inches from the lungs, so that he may eliminate the poisonous carbonic acid gas from the system and the lungs.

### GENERATING POISON

We generate sufficient poison in the system to kill us in five minutes if it were not eliminated from the system. No person can furnish the system sufficient oxygen with less than 5½ inches chest expansion. It is impossible to purify the blood, feed the cell life, and eliminate the carbonic acid gas from the system without this. It is impossible for most persons to obtain 5½ inches chest expansion without mechanical manipulation of the chest and abdominal walls. This is best secured through breathing exercises as outlined in this manual. (See demonstrations and explanation of breathing exercise.)

The imperative demand of the body for oxygen is demonstrated by the disastrous and fatal results of shutting off the oxygen. We can live weeks without food, days without water, but only moments without oxygen. Surajah Dowla, on capturing Calcutta, thrust 146 prisoners into the prison known as "The Black Hole of Calcutta." The following morning found 123 dead. The prison was but 20 feet square, with but two small windows. These Englishmen died in excrutiating agony from oxygen starvation, June 20, 1756. Many deaths from so-called heart disease are caused from asphyxia. Metchnikoff, the great scientist of the Pasteur Institute, tells us that many deaths reported as caused from heart disease, or from over-exertion, are really caused by asphyxia. Many reputed cases of chronic heart disease are cured by removing the poisonous gases from the system, by proper breathing, proper exercising, and hygenic eating. These heart disorders are functional, not organic. Cults and isms sometimes benefit these functional disorders, then charge themselves as possessing divine power.

### EFFECT ON THE LUNGS

The effect of improper breathing on the lungs is phenomenal as well as deplorable. Improper breathing permits the upper lobes of the lungs to shrivel up. The blood fails to circulate through this portion of the lung. They are poorly ventilated. The blood stream becomes sluggish. The white blood corpuscles cease to patrol this portion of the blood stream, that they may destroy the invading foe, the deadly disease germ. The unused upper portion of the lung is unfortified against these disease germs. This becomes the breeding ground for the disease germs of the "Great White Plague." Eminent physicians declare that 75 per cent of the cases of tuberculosis have their origin in this unused upper lobe of the lungs. Pulmonary diseases are classed by our best scientists as preventable diseases. If we give normal care to the preservation of our bodies, and properly care for our breathing, bathing, diet, and exercise, we may be immune from all pulmonary diseases; cold, catarrh, la grippe, pneumonia and tuberculosis.

The ravages of pulmonary diseases on the human family are appalling. The United States Census report declares that 400,000 persons die annually in the nation from pulmonary diseases. Most of these deaths could be prevented, by proper breathing and bathing, diet and exercise. The United States also has a death rate of almost 400,000 annually under 15 years of age. Most of these die from what are known as preventable diseases. This is an awful commentary on ignorance, base neglect, and criminal abuse of our bodies. These figures mean that practically one person in every three you meet, over 15 years of age, will die of some pulmonary disease.

Stand the public school pupils of the whole nation in line, allow some inhuman monster to review the procession, and smite to the death every fourth pupil in that long procession, his inhuman slaughter would be less than that of pulmonary diseases. These pulmonary diseases exact this fearful toll of death annually.

### DEMAND FRESH AIR

The New Health Conscience demands that our public schools shall teach a rational system of scientific breathing, that shall develop the lungs so that they may furnish sufficient oxygen to purify the blood, feed the cell life with oxygen, and eliminate the carbonic acid gas so that the bodies of the pupils may be rendered immune from the ravages of these preventable pulmonary diseases, colds, catarrh, la grippe, pneumonia and tuberculosis. It demands that we shall teach it in our homes so that we may also become immune to these diseases.

### THE VAST OCEAN OF AIR

*"God made the country and man made the town:*
*What wonder then that health and virtue, gifts*
*That can alone make sweet the bitter draught*
*That life holds out to all, should most abound,*
*And least be threatened in the fields and groves?"*
COWPER.

Man lives in an ocean of air as the fish live in an ocean of water. Our atmosphere is from 150 to 200 miles in height. Man lives at the bottom of this 200 mile column of air. The atmospheric pressure on every square inch of his body is 15 pounds to the square inch. The lungs throw off 100 barrels of poisoned air daily. Each pint of this poisoned air exhaled will poison one barrel of good air. The vital fires of life are kept burning by inhaling oxygen. Shut off the draught from the stove or the furnace and the fires are soon extinguished. So with life, when we cut off our oxygen supply, it is soon crushed and extinguished.

Man is forced to endure so much foul air in the office, the shop, the store and the manufacturing plant, that he must not only sleep in the fresh air but he must learn to breathe scientifically so that he may furnish sufficient oxygen to purify the blood. The screen porch, the roof garden, the window cot, the outdoor lodge, and the sleeping tent are imperative demands of the New Health Conscience.

### THE HOME

Many shut the fresh air from their homes and especially their sleeping rooms, and even from their lungs, as though it were a plague more deadly than pestilence or famine. Man's earlier homes were castles, forts and barracks. Our former enemies have become a thing of the past. We are now barricading our homes against sunshine, and fresh air and pure oxygen. We are making them breeding grounds for the deadly disease germs by sheltering the dampness and the dark. If you can not do better, be like the commercial traveler, get a delusion of fresh air. He tried in vain to raise or lower a window in his room, went to bed but could not sleep. In desperation he hurled his shoe through the pane of glass and slept like a babe. Imagine his morning surprise to find he had only shattered the mirror. Breathe from the great ocean of air around you.

### OXYGEN

Oxygen is life. It is the vital force of the body. Food is powerless to sustain the body until oxygen transforms it into heat and energy in the cell life. With abundance of pure fresh air, the quantity of food is of minor importance. Some scientists claim 95 per cent of the vital force and energy of the body is derived from oxygen, 2½ per cent from the water we drink, and 2½ per cent from the food we eat. While the air we breathe plays such a vital part in human life, few know the art of breathing. Breathing belongs to the lost arts.

Oxygen is God's free gift to man. How many sell their birthright for less than a mess of pottage. They live in homes filled with vitiated air. They sleep in unventilated rooms and breathe and rebreathe the air poisoned with carbonic acid gas. Our children study in school rooms reeking with poisoned atmosphere. Their parents sit in churches or theaters with the vitiated, poisoned atmosphere stupefying the brain and poisoning the whole system. When out in the sunshine they starve the body for oxygen, because they have never learned the art of breathing. Oxygen is Nature's great germ destroyer. With abundance of pure fresh oxygen to feed the blood and the cell life, the body is armor clad against the deadly disease germ.

The great mass of man's body is oxygen. Scientists estimate that there is one hundred and eleven pounds of oxygen in every normal sized man. Half the earth's crust is oxygen. Eighty per cent of the water of the earth is oxygen. Twenty per cent of the air we breathe is oxygen. We spend millions annually for two weeks of fresh air at the seashore, or the mountains, and starve the body for oxygen the remainder of the year because we never learned to breathe. Our lungs demand 100 barrels of fresh air daily to meet bodily demands. It is free. Deliver the goods.

# EXERCISE AND HEALTH

## CORRECT STANDING POSITION

*"A sacred burden is this life ye bear,*
*Look on it, lift it, bear it solemnly,*
*Stand up and walk beneath it steadfastly,*
*Fail not for sorrow, falter not for sin,*
*But onward, upward, till the goal you win."*

F. A. Komble.

Correct standing position is a health asset. Feet flat on the floor, legs straight, hips back, chest and shoulders up, feet in line with chest, weight evenly balanced on heel and ball of the feet. See Cut No. 1.

Correct standing position relieves all pressure of the vital organs, permits full lung capacity, and vital blood circulation. It relieves high blood pressure and stimulates the heart, lungs, liver, and kidneys. This is the correct position for walking, stair climbing, hill and mountain climbing. This position will change drudgery into a health exercise. It will make stair climbing a luxury and breathing exercise for mother. One hundred and fifty round trips on the stairs is equal to a walk of five miles in the open. We must walk five miles daily for health or perform its equivalent in similar exercise. Always assume correct standing position in stair climbing as it will relieve the strain on the stomach, kidneys and liver, and remove all strain from other vital organs.

Correct standing position lends grace and beauty to the form, it preserves the symmetrical poise of the body. It renders possible the full breathing capacity of the lungs so that our blood may be supplied with sufficient oxygen to feed every cell of muscle, tissue, nerve, bone and brain. This brings to us the vigor and buoyancy of life and health, and the virility of brain power which renders life's mental tasks a pleasure to ourselves, and the result a pleasure to others.

Cultivate a correct standing position. It will carry youth over into the years commonly known as old age. The assumed complements of old age; the bent form, the shuffling gait, the tottering step, will be wanting.

### AIDS TO CORRECT STANDING

Age usually manifests itself in our standing position and our walking. The cords draw over the knee, forcing a bent knee. The shoulders droop, the back bends, the head drops, the feet shuffle, and we have an old man's gait, an old man's walk. This is alike fatal to the professional man and the toiler. This is the age of young men. A man is as old as his arteries. The fifty-year dead line is a crime, when measured by years. The fifty-year dead line may come at thirty-five, or it may come at seventy-five years of age. Your standing position and your walk is your speedometer telling your "Flight of years."

The brain grows sluggish with the feet. You cannot think faster than you walk. Bent knees, drooped shoulders and head, curved spine, shuffling gait, points to the fact that you are "full of duck soup." The physicians and scientists call it auto-intoxication. The brain is as sluggish and as slovenly as the walk. It is poisoned by the fumes of auto-intoxication. It is imperative that we keep the feet and the legs young. The above exercise will quicken the step, the walk, and the brain amazingly. It will renew your youth ten years if followed in conjunction with the scientific principles of the care of the body. It stretches the cords of the legs and renews their youth and elasticity. It forces quicker action in the feet, thus quickening the brain action. It will wipe out the "fifty-year dead line" in your life.

## CORRECT SITTING POSITION AND INCORRECT SITTING POSITION

Correct sitting position is a vital health problem. Sitting position at best is detrimental to health. The individual of sedentary habits must wage a bitter warfare against disease germs to maintain normal health. His battle is against poor circulation of the blood, which means oxygen starvation and depleted red-blood corpuscles. This means improper nutrition for the cell life of nerve, muscle, tissue and brain. It means weakness in the white blood corpuscles, patroling the arteries, capillaries and veins. These white blood corpuscles are our body defenders against the deadly disease germ. When the white blood cells are in normal condition they destroy the disease germs, literally by the millions. With pure blood our bodies are armor clad against every disease germ. Poor circulation of the blood is the first step toward disease.

Improper sitting position cuts off the circulation of the blood from the stomach so there is poor digestion. It cuts off the oxygen from the lungs, and from the blood, and from the cell life. It cuts off the circulation of the blood from the intestines, so the assimilation from the 10,000,000 suction pumps of the intestines, is insufficient for the blood stream of a thousand miles. It cuts off the circulation from the liver, the greatest manufacturing plant in the world for its size. It weighs but 4½ pounds when normal, yet manufactures 2½ pounds of bile per day, or more than 900 pounds annually. It is the great chemical laboratory of the body for the reduction of poisonous wastes of the whole system.

### AFFECTS KIDNEYS

Improper sitting position cuts off the circulation of the blood from the kidneys. Their work of elimination is even more wonderful than that of the liver. They are but about two inches in width and less than four inches in length and weigh less than five ounces, yet the scientists tell us they secrete daily about three pints of poisonous urine, holding in solution the deadly urea. The scientists also tell us that the kidneys have about 15 miles of sewage pipe or drainage tubes through which they eliminate this deadly urea. The kidneys have been called the deaf and dumb organs of the body, because they do not sound the alarm nor give a danger signal. They endure abuse without any danger signals of distress. When they collapse they fall suddenly and without warning. Medical science has found no relief for the exhausted kidney.

Cut off the circulation of the blood by the incorrect sitting position, and you stop the elimination of the accumulated poisons of the body, through these organs; you thus poison your whole system, including the brain. This is often the cause of your drowsiness and your brain fag when you wish to make your best effort. It often causes indigestion and dyspepsia as well. The sedentary life at best is detrimental to good health, coupled with incorrect sitting position, it sounds the death knell of good health and virile brain power.

The illustrations of correct and incorrect sitting positions are self explanatory. Avoid incorrect sitting position as you would plague, pestilence or famine. Maintain a good circulation of the blood. The normal activity of all the vital organs of life are dependent on a good circulation of pure blood. The performance of the functions of the heart, the lungs, the stomach, the intestines, the liver and the kidneys depends on good circulation of pure blood. Sit correctly.

## BREATHING AND EXERCISE

We have learned something of the vital relation between oxygen and life, in the article on breathing. The whole economy of life and health depends on sufficient oxygen to fully develop the lungs, so as to make them armor clad against colds, catarrh, la grippe, pneumonia and tuberculosis. The purity of the blood depends on sufficient oxygen to surcharge the red blood corpuscles so that they may carry oxygen to every cell of tissue, nerve, muscle, bone and brain. The purity of the blood depends on sufficient air inhaled through the lungs to feed the white blood corpuscles, those mighty wandering warriors of the blood stream, with sufficient oxygen to fill them with strength, vigor, alertness, and energy, that they will assault and slay every deadly disease germ that enters the body. Our health depends upon sufficient oxygen in the blood to feed every cell of the body with sufficient oxygen for the combustion, or burning of the food in the cell life, to generate sufficient heat and energy to maintain bodily strength and vigor. Breathing is one of the most vital and essential principles of health culture. Breathe.

*"Life is a weary interlude*
*Which doeth short joys long woes include:*
*The world the stage, the prologue tears:*
*The acts vain hopes and varied fears:*
*The scene shuts up with loss of breath,*
*And leaves no epilogue but death."*

BISHOP KING, *An Interlude.*

### PREPARATION FOR BREATHING EXERCISES

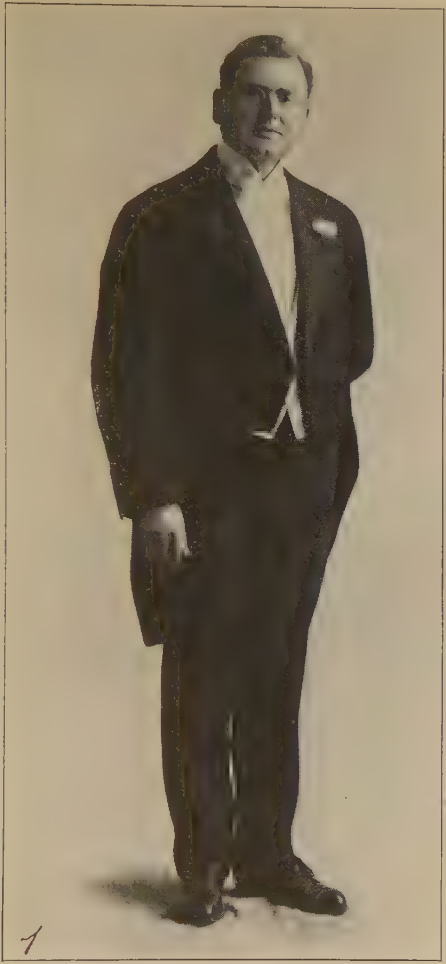
The first essential of hygenic breathing is to empty the lungs of the poisonous, polluted, vitiated air which they contain. The Process: Correct standing position. Feet flat on the floor. Hips well back and chest even with the toes. Chest and shoulders up and head erect. Inhale to the fullest capacity of the lungs. Exhale all that you can force out of the lungs by breathing. Repeat this five times. When you have exhaled all the air possible from the lungs, by natural exhalation, without taking another breath, form a small funnel by placing two fingers over the mouth, blow softly just as long as you can continue to force any air out of the lungs. When you have learned to breathe properly you should inhale with effort 150 cubic inches of air. This is called complimental air, or that which can be breathed in by a good breather. The tidal breath, that of the average individual, is only from 20 to 30 cubic inches. It should be from 50 to 100 cubic inches with each inhalation. We can inhale by effort 150 cubic inches of air. We can exhale by natural breathing, with effort, 100 cubic inches of air; this is called tidal air. We now begin forcing out the ''reserve air'' by blowing through the funnel, and we exhale 100 cubic inches more. This is the poisonous, polluted, vitiated air that usually remains in the lungs. This is the air that we must force out of our lungs before we begin our regular breathing exercise. When we have done our best to expel all the bad air, filled with the poisonous carbonic acid gas, still there remains in the lungs 100 inches of air, called the ''residual air''; this can never all be forced out of the lungs at one time. We repeat our inhalation and exhalation, and blowing through the funnel three times, after we have inhaled and exhaled five times. By these methods we have practically exhausted all the poisonous air from the lungs and we are ready for our regular breathing exercises.

Nothing can be more detrimental to health than keeping the lungs filled with poisoned air. This is carried to the blood by the air sacs of the lungs, thence to the cells and the brain life. It clogs the body.

# HEALTH CULTURE EXERCISES

*"The first physicians by debauch were made:*
*Excess began, and sloth sustains the trade.*
*By chase our long lived fathers earned their food:*
*Toil strung their nerves and purified the blood:*
*But we their sons a pampered race of men,*
*Are dwindled down to three score years and ten.*
*Better to hunt in fields for health unbought,*
*Than fee the doctor for a nauseous draught.*
*The wise for cure on exercise depend,*
*God never made his work for man to mend."*

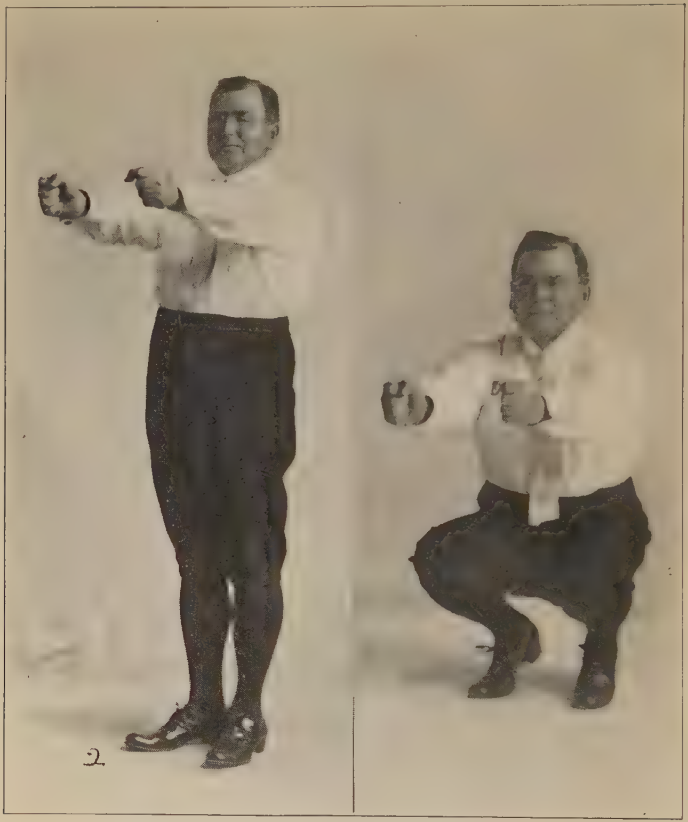
JOHN DRYDEN.



**Cut No. 1**

CORRECT STANDING POSITION

Exercise No. 1. Posture. Correct standing position (correct standing is not only a health asset, but an absolute necessity for hygienic breathing). Feet flat on the floor, legs straight, hips back, chest and shoulders up, chest in line with the feet, weight evenly balanced on the heels and the balls of the feet. See "Correct Standing Position," page 70.



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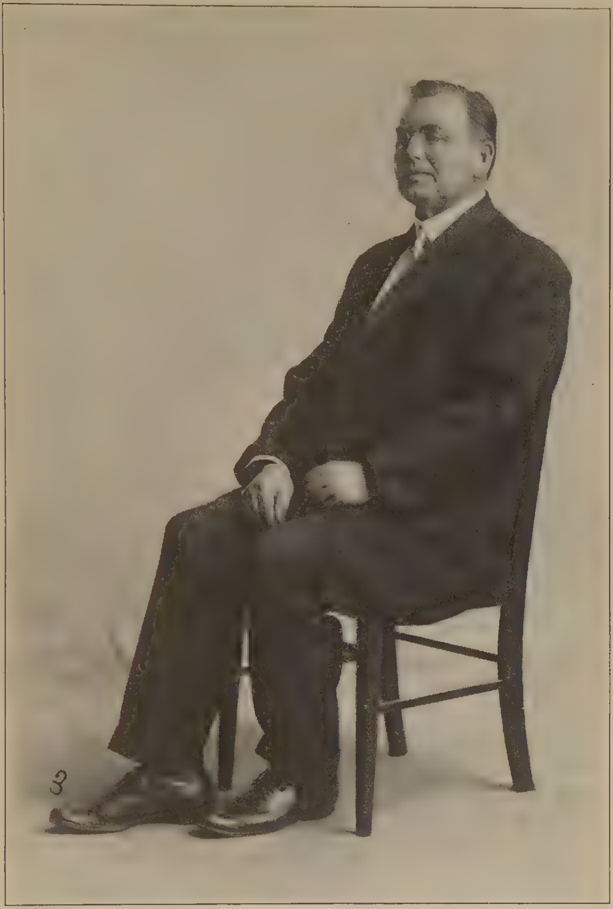
## AIDS TO CORRECT STANDING POSITION

Exercise No. 2. Posture. Correct standing position. Arms straight in front, hands clenched, elbows rigid, drop to full squatting position, and rise to original posture, maintaining the arms straight in front. Repeat the exercise five times. Squat with hands under the knees, spring up and down gently five times, jump from the floor five times striking lightly and noiselessly on the balls of the feet. Rise quickly, with open hands spat hard and rapidly along the back of the legs from the ankle to the thigh. Repeat the exercise three times. This stretches the cords over the knees and the hips, and keeps the feet and legs young. See "Aids to Correct Standing," page 71.



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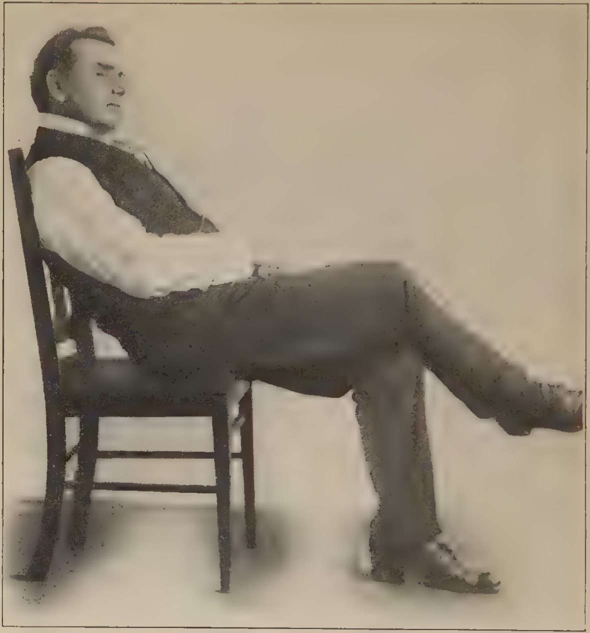
CORRECT SITTING POSITION

Exercise No. 3. Posture. Sit well back in a straight back chair, in an easy position, feet flat on the floor, chest and shoulders up, so as to avoid pressure on the vital organs. Being conscious of correct breathing will aid in correct sitting position. See "Correct and Incorrect Sitting Positions," page 72.



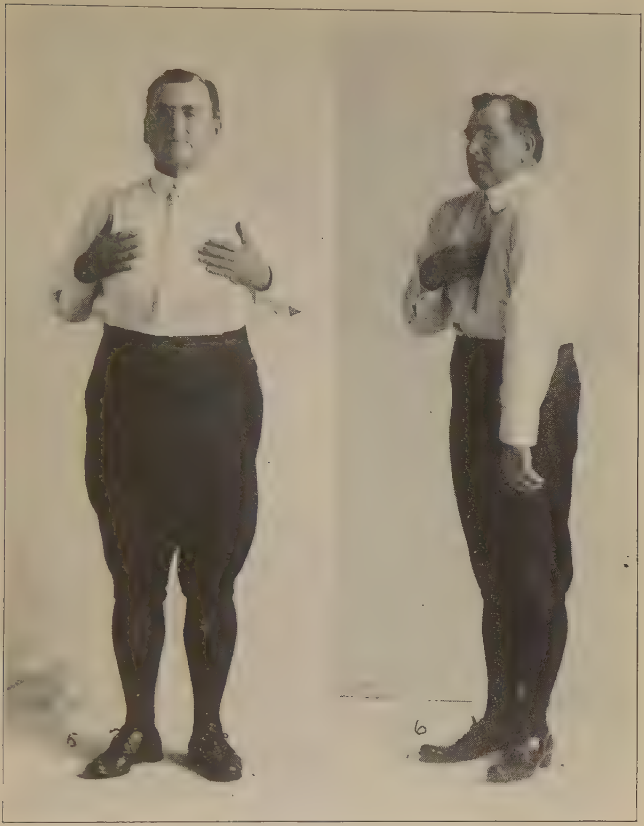
**Cut No. 4**

### INCORRECT SITTING POSITION

Exercise No. 4. Incorrect sitting position paralyzes all the functions of the vital organs, cuts off the oxygen from the lungs, the blood and the cell life; cuts off the circulation of the blood from the lungs, the stomach, the kidneys and the liver, thus poisoning the whole system. See "Improper Sitting Position," page 72.

### EXPANDING CHEST WALLS

Exercise No. 5. Posture. Correct standing position. Feet flat on the floor, weight evenly balanced, chest on line with the toes, hips well back, chest up, head erect. Inhale a deep full breath, throw the chest up, use heavy massage on the chest with both hands, then exhale to the fullest capacity, throwing shoulders forward and chest in, repeating three times. Place the heel of the hands on the sides of the chest walls under the arms, fingers across the chest, press the sides of the chest walls together, exhaling to the fullest capacity, inhale to the



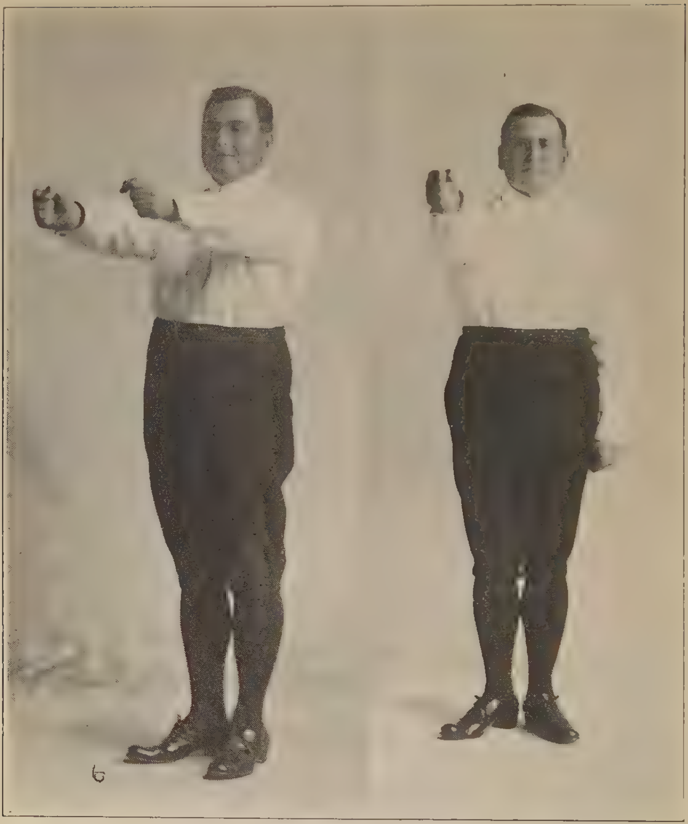
Cut. No. 5

fullest capacity of the lungs with full expansion of the chest walls. Repeat the exercise ten times. Slide the hands down to the abdominal walls and repeat the latter exercise five times over the abdomen. This exercise loosens the chest walls, develops the vital lung capacity, and increases the chest expansion. It furnishes sufficient oxygen to purify the blood, feed the cell life, and eliminate the poisonous carbonic acid gas from the system. Do not press too hard on the chest walls; there is slight danger of dislocating a rib.

## DEVELOPING VITAL LUNG CAPACITY

Exercise No. 5a. Posture. Correct standing position. Fill the chest to the fullest capacity by inhaling, massaging the chest as in

Continued on Page 86



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## DEVELOPING CHEST EXPANSION AND LUNG CAPACITY

Exercise No. 6. Posture. Correct standing position. Arms straight in front, rigid, hands clenched. Swing arms straight over the head close to ears, swing arms down close to the side and back, maintaining them straight and rigid, swing arms back to original position, repeating the exercise ten times. Inhale to the fullest capacity of the lungs as the arms are raised and exhale to the fullest capacity as they are lowered. Repeat the exercise ten times, inhaling and exhaling slowly, and swinging the arms very rapidly. This is a good exercise for warming up for the morning cold bath.

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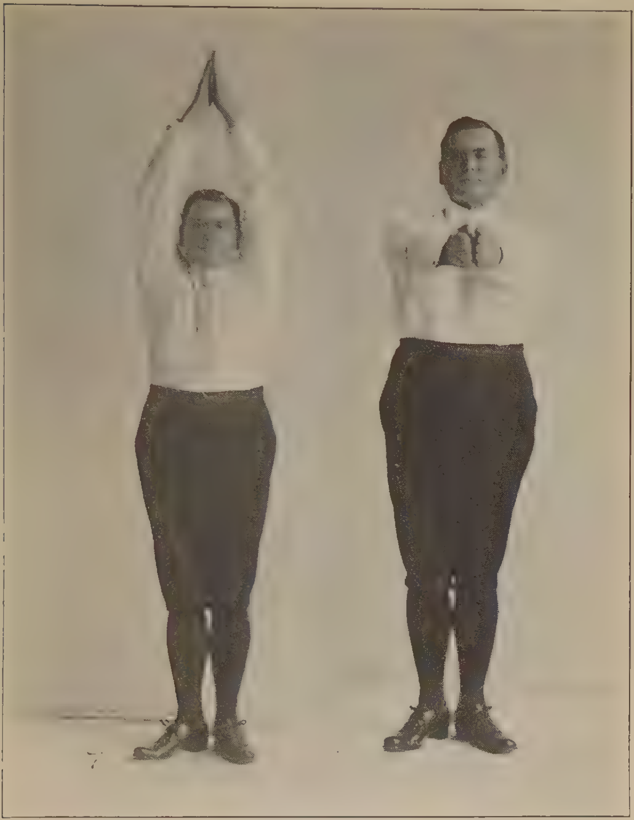

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DEVELOPING THE DIAPHRAGM AND THORAX

Exercise No. 7. Posture. Correct standing position. Arms at the side, palms open, maintain the arms rigid, raise them straight out from the sides, striking the palms over the head, returning them to the sides without bending. Repeat the exercise ten times, inhaling and exhaling slowly and deeply, to the fullest capacity. This develops the diaphragm, enlarges the thorax and develops the breathing capacity.

EXPANDING CHEST AND LUNGS

Exercise No. 7a. Posture. Correct standing position. Arms straight in front, rigid, hands clenched and together. With a sharp,

Continued on Page 93

**Cut No. 8**

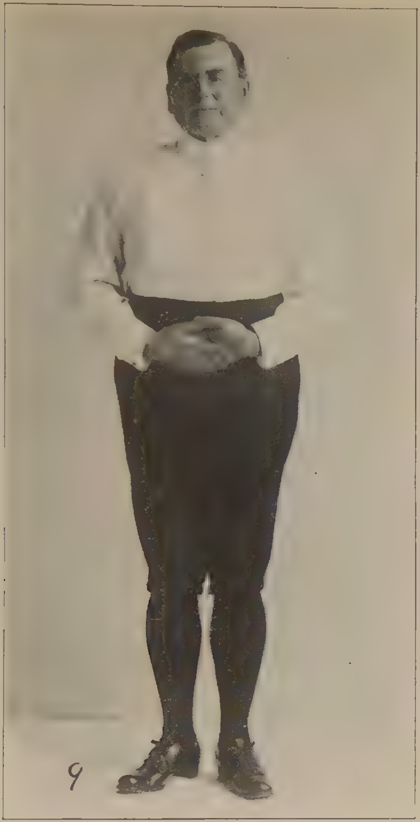
## ABDOMINAL BREATHING—STRENGTHENING DIAPHRAGM

Exercise No. 8. Posture. Lying flat on the back, right hand on the abdomen. Exhale all the air possible, pressing down lightly on the abdomen with the hand. Inhale to the fullest capacity, lifting the abdomen by the air pressure of the diaphragm. Repeat this slowly ten times then repeat it rapidly ten times. This teaches the true abdominal breathing, strengthens the diaphragm, expels all the carbonic acid gas, and furnishes sufficient oxygen to feed the cell life, purify the blood, and develop the lungs. Practice it daily until you master the art of abdominal breathing.

Exercise No. 6 Continued from Page 82

## INCREASING LUNG CAPACITY

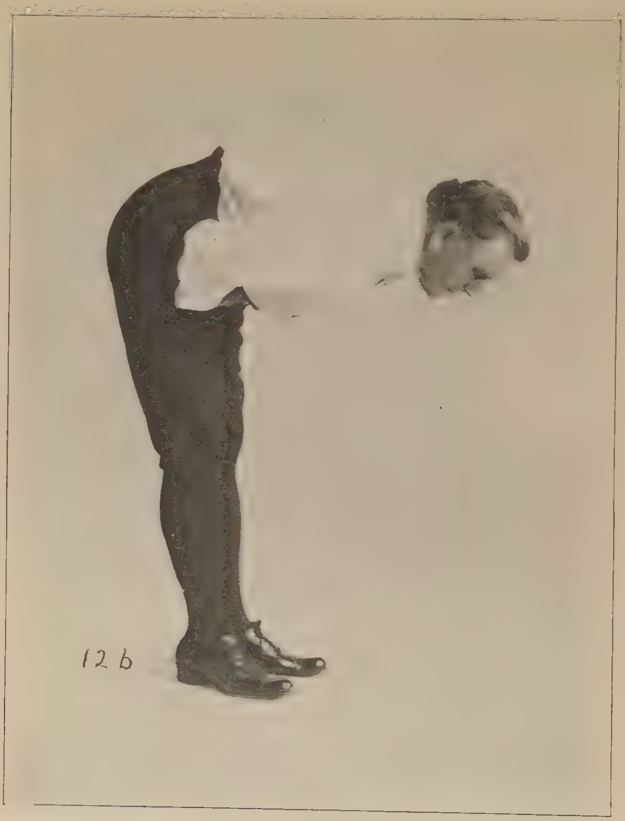
Exercise No. 6a. Posture. Correct standing position. Right arm extended straight in front, left arm at the side, both rigid, hands clenched. Swing arms as in previous exercise, raising and lowering them alternately, swinging them close to the head and the hips. Begin the movements slowly, inhaling and exhaling to the fullest capacity. Repeat the exercises rapidly twenty times. This exercise develops the intercostal muscles of the chest, builds up the shoulders, develops the chest, front and back, increases the lung capacity, strengthens the diaphragm. They increase the circulation of the blood, and prevent hardening of the arteries. Practice them morning and evening.



**Cut No. 9**

### RELIEVING GAS PRESSURE BY BREATHING

Exercise No. 9. Posture. Correct standing position. Press the abdomen backward with both hands, maintaining the legs straight and rigid, bend the body forward at the waist line as far as possible, exhaling all the air from the lungs, inhale to fullest capacity as you assume original position. Repeat this exercise from five to ten times. This will remove all gas pressure from the stomach, the bowels, the heart and the lungs. It will oftimes relieve what has been mistaken for a serious case of heart disease, which is often nothing more than gas pressure, caused from improper breathing, and an abnormal food supply and wrong combinations of food. Practice this whenever troubled with gas pressure.

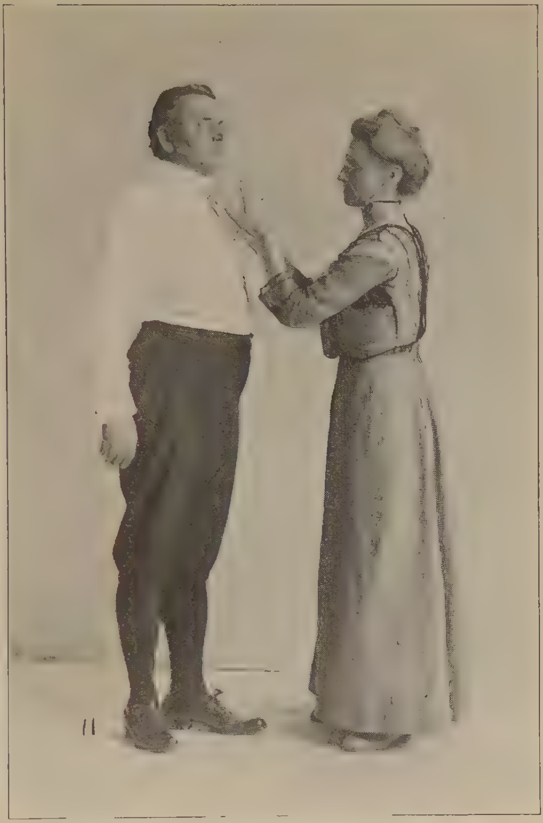


**Cut No. 10**

RELIEVING GAS PRESSURE

Exercise No. 5a Continued from Page 81

previous exercise. Place the right hand on the chest and exhale to the fullest capacity; exert a slight pressure on the chest, throwing the shoulders forward, then blow slowly, forcing all the residual air from the lungs. Repeat the full exercise five times without special breathing, then five times with special breathing. Repeat the exercise morning, noon and night, until you acquire five and one-half inches chest expansion.



**Cut No. 11**

DEVELOPING THE CHEST WALLS BY PERCUSSION

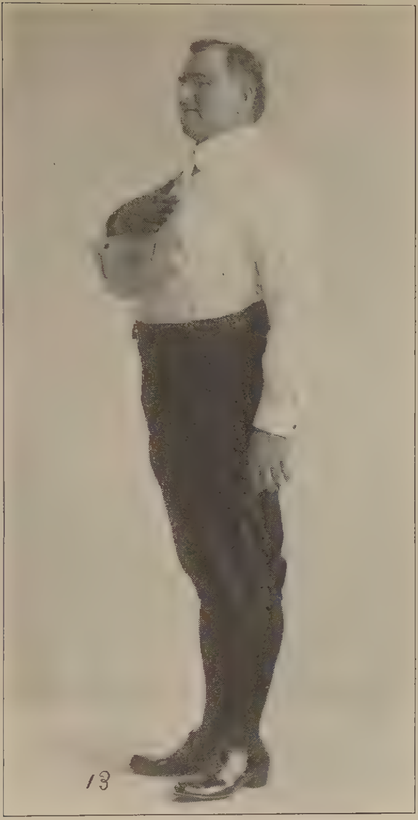
Exercise No. 11. Posture. Correct standing position. Throw the chest up and out to the fullest capacity, with deep inhalation. Have a companion do the percussion work over the chest, striking lightly yet firmly with a springing motion of the hands, then exhale to the fullest capacity. Repeat the exercise three times. This increases the chest expansion and develops the vital lung capacity. Moderation in the percussion work is essential for the beginning.

**Cut No. 12**

## STIMULATING ABDOMINAL MUSCLES BY BREATHING.

Exercise No. 12. Posture: Correct standing position. Chest forward on line with the toes, hips well back, shoulders up. Inhale to the fullest capacity, drawing the air through the nostrils very slowly, at the same time drawing the abdomen back as far as possible. Let the left hand rest lightly on the abdomen, following it in the movements. Hold the breath for ten seconds, tensing the muscles of the abdomen, holding it in the backward position. Exhale very slowly, relaxing the abdominal muscles as the breath expires. Repeat the exercise three times to begin with. Remember, this is the reverse from the natural breathing and movement of the diaphragm. Repeat

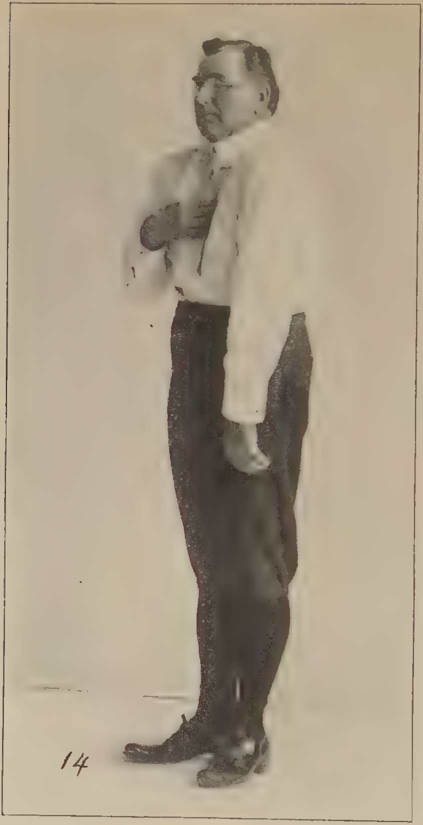
Continued on Page 93



**Cut No. 13**

DEVELOPING LUNG CAPACITY—EXPANDING CHEST WALLS

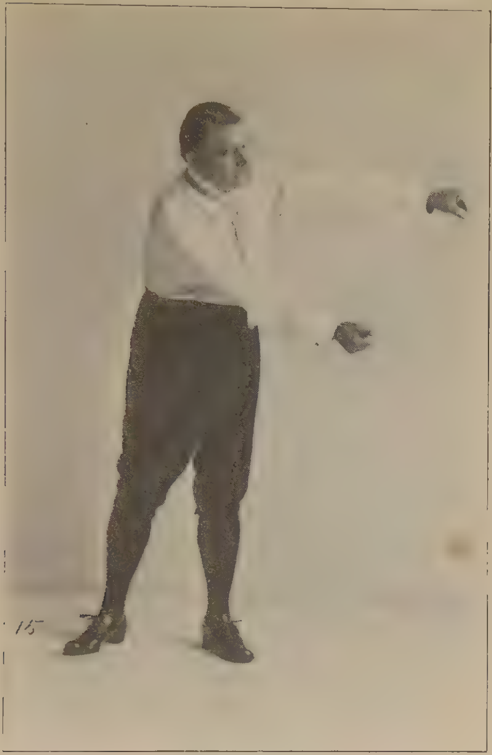
Exercise No. 13. Posture: Correct standing position. Chest up, shoulders back, right hand on the chest, inhale to the fullest capacity, hold the breath for a moment, exhale all the air possible through the nostrils, lowering the chest. Repeat the exercise ten times.



**Cut No. 14**

## MANIPULATING CHEST WALLS FOR CHEST EXPANSION

Exercise No. 14. Posture: Correct standing position. Right hand on chest. Exhale all the air possible from the lungs through the nostrils. Place two fingers over the mouth, force all the air from the lungs by blowing. Throw the chest in and the shoulders forward. Repeat ten times. Place the hands on the sides of the chest, forcing chest walls together while you repeat both exercises five times each.



**Cut No. 15**

MASSAGING THE LIVER, STOMACH AND KIDNEYS

Exercise No. 15. Posture. Correct standing position. Feet flat on the floor, twenty inches apart, hips back, chest on line with the toes, head and shoulders up, arms parallel and at the left side. Maintaining arms parallel, swing them as far to the right as possible, throwing them up as high as you can swing them. Swing them backward to the left with vigor in the same manner, repeating the exercise ten times like the swinging of a pendulum. Assume original position, arms at the side, lean as far to the right as possible, reaching with the finger tips far below the knee, swing far to the left in the same manner, repeating the exercise ten times. Use the deep abdominal breathing through the exercise. This stretches the diaphragm, increases the breathing capacity, invigorates the grace muscles of the

Continued on Page 93

Cut No. 16

## FLUSHING FACE AND HEAD

### Exercise No. 16

This is one of our most valuable breathing exercises. The real merits of this valuable breathing exercise have not yet been noted. As a breathing exercise it is only in its infancy. With the mouth and nose closed tightly, we force the air in the mouth cavity as strongly as possible. Closing the eyes, dropping and tensing the neck and bulging the cheeks. This forces the blood into the capillaries of the cheek, giving them youth, freshness and color. It flushes the arteries and capillaries of the eyes, lending strength, brilliancy and endurance. It forces a perfect circulation of blood through the brain cells, eliminating the poisonous gases from the brain, increasing brain power, efficiency and virility. It flushes the ear tubes, opening their capillaries, quickening the sensitiveness of the nerves and preserves the hearing.

More than this: It sounds the death knell to colds. It generates a powerful germicide that is fatal to cold germs, if administered at the inception of a cold. Simply stoop over as if tying your shoe and flush heavily three times. The white blood cells will destroy the cold germs immediately and your cold will be over. The cold is the father of catarrh, la grippe, pneumonia and tuberculosis. That vast procession of 400,000 annually marching into the grave from pulmonary diseases can point to the deadly disease germ of the common cold as their assassin. Flushing, with a system of hygienic bathing, including the air bath, the sun bath, the friction bath, the sweat bath, the hot and cold water bath, with the applied principles of scientific diet, and a normal supply of food, will make the human body practically ironclad against the common cold, and all pulmonary diseases. The time is not far distant when we will quarantine against colds and all pulmonary diseases. Practice health culture and avoid quarantine.

Exercise No. 7a Continued from Page 83

quick jerk throw them apart 12 inches, with another jerk throw them apart 12 inches more, continuing this until they are forced back as far as possible. Hold them at this point for three deep full breaths, bring them back by the same process, lowering them a little and crossing them in front of the chest. Repeat the exercise five times. Inhale and exhale to the fullest capacity. Assume original position and with a wide sweep of the arms, throw them backward as far as possible inhaling to the fullest capacity. Repeat this exercise five times. This develops the chest and the lungs.

Exercise No. 12 Continued from Page 88

the exercise three times with the natural breathing movements of the diaphragm, extending the abdomen as you inhale, and drawing it backward as you exhale, breathing slowly. This strengthens the diaphragm and abdominal muscles and gives control over the muscles supporting the abdomen so that they will not permit its drooping and extension. This also aids digestion and assimilation of food and is a relief for constipation.

Exercise No. 15 Continued from Page 91

side, massages the liver, the kidneys, the stomach and the intestines, breaking up adhesions. These exercises should be taken very moderately at the beginning, increasing their strenuousness with practice. Older persons and persons with heart trouble need the exercises, but must take them moderately at the beginning, using them five times instead of ten.

# HYGIENIC BATHING

Bathing for health is imperative. Stern nature's best panacea.

> *"The warm ablution, just enough to clear*
> *The sluices of the skin, enough to keep*
> *The body sacred from indecent soil.*
> *Still to be pure, even not to conduce*
> *(As much it does) to health were greatly worth*
> *Your daily pains: it is this adorns the rich,*
> *The want of it is poverty's worst foe.*
> *With this eternal virtue age maintains*
> *A decent grace: without it, youth and charms*
> *Are loathsome."*
>
> ARMSTRONG.

Bathing is life's elixir.

Bathe in the golden glow of the radiant sunlight.

Bathe in the balmy zephyrs of Morn's breaking dawn and twilight.

Bathe with the friction of the towel and the tonic of the bristle brush.

Bathe in Nature's sweat-bath, product of toil: Pound of flesh as price of health.

Bathe in the cold sparkling water of Nature's fountain for tone and tonic.

Bathe in the steaming hot fountains, for cleansing, for rest and sleep.

The skin is man's thermometer. It is the keyboard of the various organs of the body. The skilled musician can bring out of it the grand harmony of health. Hygienic bathing and health are synonymous terms.

The skin of the average person has an area of seventeen square feet; it weighs about seventeen pounds. It is capable of holding half the blood supply of the whole body. Bathing can call this full supply of blood into the skin. It also has the power to expel it from the skin and force it into the internal organs. Local applications of friction and hot or cold water can relieve congestion of the organs of the body, or force the blood into the starving organs, so they may perform their functions. The body demands six daily baths for health. They are the air bath, the sun bath, the friction bath, the sweat bath, the hot water bath and the cold water bath.

## BODY SEWERS

The skin has 3,500,000 pores or sweat glands. Some parts of the body have 3000 pores to the square inch. The sweat glands are little spiral tubes about one-fourth of an inch in length. They are the miniature sewers of the body for the elimination of poisonous waste. They breathe in oxygen and eliminate carbonic acid gas and other poisons. Some scientists tell us that if these miniature sewers were placed end to end they would form a sewer system 32 miles in length. The surface of these pores is said to be more than 32,000 square feet.

Think of more than 3,000,000 sewers emptying their filth and poisons on the surface of our bodies. Add to this the accumulated filth from without and the millions of disease germs that daily assault our bodies, then who can challenge the imperative demand for scientific and hygienic bathing. Do you wonder that this accumulated filth on the body of the non-bather becomes a stench in the nostrils of their friends? The nostrils will detect the non-bather just as quickly as they will detect the smoker and the drinker. Perfume is as helpless in destroying the odor of the non-bather, as are cloves and coffee in destroying the fumes of tobacco or liquor. They only change the flavor.

## THE SKIN A THERMOMETER

We said the skin was the thermometer of the body. It is more than a thermometer. It not only tells the temperature of the body, but regulates it as well. The friction bath and the hot water bath can attract the full blood supply to the skin, so that it holds half the blood supply of the whole body. This relieves the congestion of all the internal organs. The cold bath drives the blood from the skin to the internal organs. The reaction brings a tonic to the whole body. The stagnant pool is a deadly pool. The sparkling rill bubbles with life. Bathing and breathing brings the tonic of health to the whole system. It supplies the body with oxygen to purify the blood, feed the cell life, eliminate the carbonic acid gas from the system, and fill the 725,000,000 air sacs of the lungs with pure oxygen, in which no disease germ can live. He is slain by the defenders of the body.

## PULMONARY DISEASES

Practically all pulmonary diseases are preventable diseases. They are caused or perpetuated by lack of hygienic bathing and breathing. Their toll of death is as criminal as it is appalling. Our government reports declare that 400,000 of our people die annually from pulmonary disease. It is also reported that 400,000 of the youth of our nation die annually before they reach 15 years of age. A large percentage of these die from pulmonary diseases. The awful toll of death from preventable diseases in our public schools is alarming. More than 75 per cent of these deaths could be prevented by hygienic bathing and breathing. More than 90 per cent of the deaths from pulmonary diseases could be eliminated by scientific breathing and hygienic bathing. We will now consider briefly the six baths necessary to preserve the normal health of the body. A number of these are taken at the same time. The six baths necessary for normal health are the air bath, the friction bath, the sun bath, the sweat bath, the hot water bath, and the cold water bath.

### THE AIR BATH

The air bath is both external and internal. Breathe: Oxygen is life. It is Nature's own best tonic. It feeds the cell life. It strengthens and preserves the lungs with their 2000 square feet of breathing surface, their 725,000,000 air sacs, and their 350 cubic inches of air capacity. The necessary breathing capacity of the lungs, 350 cubic inches, cannot be secured without 5½ inches chest expansion. This can be obtained only by mechanical manipulation of the chest and abdomen. It requires a pressure of 1500 pounds for a 3-inch chest expansion. It requires a pressure of 2000 pounds on the chest and abdominal walls for a 5½-inch chest expansion. Some exert a pressure of 3000 pounds. The air bath is both external and internal. The internal air bath fills the lungs with oxygen. It freights the millions of red blood corpuscles of the blood with sufficient oxygen for purification. It feeds the cell life of tissue, nerve, muscle, bone, and brain with sufficient oxygen for food combustion, to furnish heat and energy for the body. It enables the millions of red blood corpuscles to carry the poisonous carbonic acid gas from the system to the millions of air sacs of the lungs for elimination. It develops the whole pulmonary system and renders it immune from pulmonary diseases; colds, catarrh, la grippe, pneumonia, and tuberculosis.

### EXTERNAL AIR BATH

The external air bath is imperative from a health standpoint. Man's body was never intended to be a hot-house plant. He was created for the outdoor life. Indoor life, steam heat and heavy clothing have wrought wreck and ruin with man's physical organism. Colds, catarrh, la grippe, pneumonia and tuberculosis are unknown among the Eskimo of the Arctic, they die like flies in a trap under our so-called modern civilization. The same is true of the Indian and the Jinrikisha men of Japan. Man's body should be tempered to the chill of the temperate clime, also to the cold of the winter's blast, by the air bath of the bedroom, and the bathroom, by the breezes of the woods, the automobile and the ocean. The body can be so tempered that it is immune to all pulmonary diseases, such as colds, catarrh, la grippe, pneumonia and tuberculosis. "He tempereth the wind to the shorn lamb?" Never: He tempereth the shorn lamb to the wind. Winter winds blow just as fiercely and summer suns beat just as intensely whether or not there be any shorn lamb. The lamb may be tempered to the wind. So our bodies may be tempered to the winter's blast. Drafts have no terrors to him who has properly cared for his body by the necessary air bath, the draft means simply more fresh air and a fuller supply of oxygen. Wet feet do not mean a cold. They mean health, just as they mean health to the barefooted boy who plods through the mud and rain until the snow flies. Oxygen is life. Nature's demand for it is imperative. Bathe with the internal air bath, until the whole system is surcharged with oxygen. Bathe with the external air bath until the whole body is tempered to the summer chill, and the winter blast. Bathe with the internal and the external air bath until the whole body becomes immune to all pulmonary diseases of colds, catarrh, la grippe, pneumonia and tuberculosis.

## THE SUN BATH

*"Blest power of sunshine: genial day:*
*What balm, what life is in thy ray:*
*To feel thee is such real bliss,*
*That had the world no joy but this,*
*To sit in sunshine calm and sweet—*
*It were a world too exquisite."*

MOORE.

Sunlight is the source of all energy. Increase heat vibrations and they become light, increase light vibrations and they become electricity. The sun creates the mineral salts, the vegetable, the fruit, the cereals, from the same soil, the same moisture, the same oxygen. The sunlight not only paints the aurora's blushing morn, and evening's golden glow, and dazzles high noon with her shafts of crystal light: she tints the flower and paints the golden glow on the orange, the crimson tint on the apple, the plum and the peach. She pours into them flavors richer than nectar, and sweeter than honey. So sunshine is health and life to the human body. It paints the rosy bloom of health upon the cheek. It sends the rich crimson blood coursing through arteries and capillaries and all cell life. It distills the sparkling luster in the eye, and paints the glow of health upon the skin. It hurls the deadly shafts into the malignant disease germs of cold, catarrh, la grippe, pneumonia and tuberculosis, and renders us free from all pulmonary diseases.

Bathe in the sunlight of valley, plain and hilltop: bathe in the sunlight of ocean sands and mountain slopes and Alpine summits. Live in the sunshine and let the sunshine live in you. The mechanical power of the world today is stored sunshine. We behold it in our paper, our wood, our coal, our oil and our gas; our electricity, our diamonds, our radium. Stored sunshine is the world's mechanical power in the twentieth century. It turns our machinery, drives our engines, it pulls our trains over continents, drives our ships across the seas, and hurls our flying machines through the air. It makes fairy lands of our cities and turns our night into day. Sunshine revitalizes our bodies, it hurls death at our deadly enemy, the disease germ, and fills our bodies with the real elixir of life. Sunshine is Nature's own best tonic.

### SUNSHINE

Man needs more sunshine in his home, more sunshine in his life, more sunshine in his heart. Bathe in sunshine in "God's great out-of-doors." Take your daily sun-bath. Drink in God's free sunshine, it is sweeter than the nectar of the gods. Flood your homes with sunshine. It is Nature's own disinfectant. Flush your body with light and sterilize your whole being with a gorgeous sun bath. Shafts of sunlight are more deadly to disease germs than formaldehyde. Many bedrooms become charnal houses because all sunlight has been banished from them. Better have the whole side of your bedroom open than to have the sunlight excluded. Build your screen porches with east or south exposure and you can have your air bath and your sun bath combined. The bath room and the screen porch sleeping rooms are the most valuable rooms of the home. Bathe in the sunshine. Sit in the sunshine. Walk in the sunshine. Run in the sunshine. Live in the sunshine. Flood your home with sunshine.

## THE FRICTION BATH

The skin is not only the thermometer of the body and the dumping ground of the 3,500,000 sewers emptying on the surface of the body, through the pores or sweat glands, with their 32 miles of sewage, for the elimination of the poisons of the system, together with the 32,000 square feet of sewage surface lining the sweat glands; but it is also the "field of the dying" for the millions of cells forming the epidermis or outer skin of the body. The whole body is made up of cells, every cell performs its own function: brain cells think, stomach cells digest food, liver cells store sugar and manufacture bile, kidney cells excrete and eliminate poisonous urea, muscle cells generate energy, nerve cells generate feeling or sensation, skin cells manufacture epithelium, or the covering for all parts of the body needing protection; the lining or coating of the lungs, the stomach, the intestines, the liver, the kidneys and all internal organs of the body.

## CELL LIFE

The cell life of the body is so delicate, and their mission so strenuous and so hazardous, that millions of them have a life of less than 24 hours. The birth of the cell life is one of the miracles of the body. Scientists tell us that in the blood alone 8000 cells are born every second to recruit the slain and retired blood cells—500,000 every minute, 30,000,000 every hour, and 700,000,000 every day. Birth implies death, so we have 700,000,000 deaths daily in the blood stream of our bodies. These dead bodies must be eliminated. Some are made into carbonic acid gas, the liver manufactures millions of them into bile daily, millions more are eliminated through the kidneys.

The cells on the outer portion of the body must be eliminated in a different way. Millions of these cells forming the epidermis, or outer skin of the body, die daily. The skin, with its accumulated filth, is worse than a graveyard: it is a morgue with its millions of unburied corpses. A few of these dead cells are used in the economy of the body, they are manufactured into nails for the fingers and toes and also form a part of the ingredients for the hair. Millions more are crowded to the outer surface of the body by the new-born cell; here they form scales and dandruff, and with their accumulated filth clog millions of miniature sewers of the body, sealing the pores and shutting in the poisons that should be eliminated through the skin.

## PERSPIRATION

The seriousness of this stoppage of the sewer system of the skin of the body is revealed by the fact that if we varnish the body, sealing all the pores, death will result in a very brief time. In Europe a child was shellacked and varnished to represent the "Gilded Age." Over the varnish was added a coat of gold leaf. In a brief time the child was dead. The body should excrete from the pores of the skin from two to three pints of perspiration daily. This perspiration has many poisonous elements. The following analysis shows the various elements in 1000 parts of perspiration: Water, 995.753; urea, 0.043; fats, 0.014; lactates, 0.317; sudorates, 1.563; common salt, 2.230; chloride of potassium, 0.244; phosphates, a trace; albuminates, 0.005;

retired skin, a trace. (Winfred E. Baldwin, M.D.) Specific results from the clogging of these sewers is the slow poisoning of the system, overworked kidneys and liver in forcing on them the work of elimination belonging to the skin; neuralgia, gout, sciatica and rheumatism, all filth diseases.

The friction bath is for the removal of these millions of dead cells from the body, opening the millions of clogged sewers, thus permitting the skin to perform its function of eliminating the poisons, of carbonic acid gas, urea, salt and other accumulated poisons. The friction bath also opens the pores of the skin so that they may breathe in oxygen, for they are miniature lungs and breathe in one-thirtieth as much oxygen as the lungs. The friction bath keeps all these pores of the skin open. It brings the blood coursing through arteries and capillaries to the surface of the skin, rendering it healthy, permitting it to perform its eliminating function. It opens the oil glands so that the skin may be kept as soft as velvet, instead of being harsh and horny. The baby's skin is the type of what the adult skin should be under normal care. Wrinkles and harsh skin is not the compliment of age, but the marks of the abuse of the body, through ignorance or wilful neglect.

### TIME FOR FRICTION BATH

The friction bath should be taken in the morning, following the breathing exercises and the air bath. The body should be rubbed thoroughly with a rough towel, including the trunk, the arms, and the legs. We should follow this with the stiff flesh brush, rubbing in a rotary motion from the hands and feet toward the body, and over the body in a rotary movement. Our morning exercise and cold bath should follow the friction bath. The face should be included in the friction bath. The friction for the whole body should be sufficient to bring a ruddy glow to the flesh.

### THE SWEAT BATH

One of man's earliest imperative commands was, "Thou shalt earn thy bread by the sweat of thy face." This was not a penalty for transgression. Toil is not divine penalty. Before the fall, man was commanded to "dress and keep the garden." The sweat bath is an absolute health necessity. The demands of the body for the friction bath are intensified in the appeal for the sweat bath. The friction bath touches only the mouth of the millions of sewers opening on the surface of the body. The sweat bath flushes and cleanses the inner 32,000 square feet of surface area in the sweat glands, and eliminates the filth and poison from the 32 miles of sewage, in the drainage tubes, emptying on the skin of the body. It is absolutely imperative that we have the sweat bath at least three times per week. Normal health is impossible without the sweat bath. Sweat! Sweat! Sweat! Walk the highways, run the fields, climb the hills and mountain steeps, spade the garden, chop the wood, wash, scrub, sweep, exercise, do anything—but sweat. Have your sweat bath three times per week, follow it with your hot cleansing bath, finishing with a cold bath, to close the pores of the skin, to avoid colds.

### FLESHY PERSONS

With fleshy persons the normal two pints of perspiration daily may be increased to double that amount in the sweat bath. This thoroughly flushes the millions of sweat glands or sewers on the surface of the skin, and eliminates the accumulated poisons of carbonic acid gas, salt, urea and other poisonous substances that should be eliminated through the skin, but which must be carried to the kidneys and liver when all the sewers of the skin are clogged. The pores of the body act as miniature lungs when in normal condition. They inhale oxygen and exhale carbonic acid gas. The normal skin aids the body in secretion and absorption, in respiration and elimination. The snake sheds his skin all at one time. With man the cells die daily and are eliminated daily if the body is well cared for. Exercise will keep the blood active, brushing and rubbing will increase the circulation. The sweat bath will flush the 3,500,000 sewers opening on the skin and cleans the 32 miles of sewage, with its 32,000 square feet of surface. The sweat bath lowers the temperature of the body.

### THE HOT BATH

The hot water bath is the gentleman's bath, or the cleansing bath. The hot water bath is imperative both for cleansing and health. The lack of bathing facilities in modern civilization is appalling. We spend thousands for our homes, our furniture, our art, our clothing, but often make no adequate provision for our hot water bathing. Many who have the facilities in their homes, use them but once a week or once a month. A hot bath is regarded as such a luxury in hotel life that they charge you twice as much for a room with bath as without. California is one of our first states compelling bathing facilities in our apartment houses for each family, and this law is of recent enactment. There should be a law compelling every hotel to provide adequate bathing facilities for every guest. There should also be a law compelling a sanitary bath in every dwelling, as well as abundance of fresh air and sunshine. This law should compel hot water attachments for every bath. Better have three rooms and a bath, than five without. Educate the people to bathe. The hot water bath should be used at least three times per week.

### EFFECTS OF HOT WATER BATHS

The hot water bath or cleansing bath may follow immediately the sweat bath. The hot bath is not the morning bath. Some precautions are necessary for the hot bath. The body should be warmed by exercise to secure good circulation of the blood. The face, head and neck should be bathed in cold water to prevent a rush of blood to the head, causing headache, or the possibility of the rupture of the capillary blood vessel in the brain. The temperature of the water should not be too high on entering, increase the temperature as the body heats in the water. It is well to exercise from five to ten minutes in the hot water until the body is in thorough perspiration, then thoroughly soap, and vigorously rub the body with a stiff flesh brush; never use a sponge, they are filthy. Use the purest soap and thoroughly scrub the body with the flesh brush. This cleanses the body, opens the pores of the skin, flushes the arteries and capillaries of the skin with blood, quickens the circulation, relieves the congestion of the internal organs, permits the miniature lungs—the 3,500,000 pores of the body—to inhale oxygen and exhale carbonic acid gas. It aids the sweat glands to complete their flushing begun in the sweat bath. The hot bath makes possible perfect elimination of poisonous and waste matter through the skin and thus lightens the work of the liver and the kidneys, so strenuously overworked by the abnormal amount of food forced upon them.

The hot bath is a panacea for pain and often affords immediate relief. It should be avoided for at least two hours after eating. The hot bath should be very short for thin people, also persons with heart disease or kidney trouble. The time for all baths, is like the individual diet, it must be adapted to the individual. The Turkish bath and the Russian bath are the lazy man's bath. When the individual is too lazy to get a natural sweat bath, and too indolent to take his hot cleansing bath, the Turkish or Russian bath is better than nothing; they have no place in the hygienic life but serve as a poor substitute for it.

### HAIR SHAMPOO

The hot bath offers such good facilities for a first class shampoo that we will describe it here as a part of the hot water bath. Sitting in the hot water bath during the time you are waiting for the body to get in a good perspiration, take pure tar soap, thoroughly lather the hair and the scalp, working the soap into the scalp by the balls of the fingers or the finger tips. Take a good stiff bristle brush, press it hard on the scalp and work it back and forth, not brushing, but working it sufficiently to loosen the dandruff, wash out the soap and give the scalp a new application, repeating the process about three times. Wash the scalp thoroughly and finish with some good shampoo after washing all tar soap from the hair. This shampoo should be taken about once in two weeks. The finishing shampoo should have sufficient alcohol in it to thoroughly cleanse the scalp from all soap, and to serve as a tonic to the skin.

Having taken our shampoo and thoroughly cleansed the head and scalp, we are ready to complete our hot bath. By this time the body should be in a good perspiration and ready for a thorough soaping and a good scrub with a strong flesh brush. From three to five minutes should complete the hot bath, but we must always finish our hot bath with a cold bath to avoid colds. The hot bath is the best relief for fatigue and the best preventative of sore muscles, after strenuous work or a long mountain climb. The hot bath is especially beneficial in gout, sciatica, and rheumatism. The bath cabinet with a thirty-minute siege is good for rheumatic conditions. This bath is also good to break a cold. Always finish the hot bath with a cold bath to render the body immune to colds, catarrh, la grippe, pneumonia and tuberculosis. Never use your cabinet bath for your sweat bath unless it is an absolute necessity. The cabinet bath is the invalid's bath. Exercise is needed for the sweat bath.

Aged persons should avoid extremes in all baths. After 60 years of age the arteries fail in strength and the increase in blood pressure endangers the brain capillaries; the extremes of hot and cold baths should be avoided. This does not mean that they may abandon the hygienic bathing, they need it now more than ever, but they must avoid the extremes because of increased blood pressure, and weakening of the arteries and capillaries. Bathing and breathing and exercise is the paradise of the aged. It will add more than a score of years to their life if judiciously administered. Bathe and breathe scientifically.

### THE NEUTRAL BATH

The neutral or warm water bath is so closely identified with the hot water bath and serves such a distinct purpose in itself that it is best to outline its work with the hot water bath. Many persons have mistakenly used the hot water bath for the purposes for which the neutral bath is intended and for this reason failed in results.

The neutral or warm water bath is for nervousness, exhaustion and sleeplessness. It is the best tonic known for nervousness. It quiets the nerves and produces sleep. The temperature of the neutral bath is important, it should not vary one degree from a temperature of 96 degrees. A thermometer should be used and the temperature held rigidly to this point.

### NERVOUSNESS

The lack of the care of the body, over-eating and the strenuous life of twentieth century civilization, exhausts the entire 10,000,000 nerves of the body. Nervous prostration is decimating the ranks of the student body of our high schools and colleges. It is blasting and blighting the hopes and the health of the students for all time. It is forcing thousands of trained intellects to spend their lives nursing wrecked bodies, shattered nerves and blasted hopes, rather than pursuing their chosen vocation. Nervous prostration is wrecking our homes and filling our insane asylums. It is decimating the ranks of our business and professional men, cutting them down before they reach their prime. It is robbing the church of some of her brightest intellects in the pulpit and forcing them into retirement when they should be in the flower of strong manhood. The care of the nervous system is imperative.

### NEUTRAL BATH A TONIC

The neutral bath is the best tonic known for overworked and tired nerves. The wreck of the 10,000,000 nerves of the body brings nervous prostration, sleeplessness and exhaustion. These will wreck both mind and body. Drugs are powerless for restoration, they only add to the derangement. Nature must perform her own cures through rest and normal methods. Prevention, not cure, is the watchword of medical science today. Protection of the nervous system is the only safeguard for our vast army of students, our overworked business men and our professional men and women as well as the women and children in our homes. The neutral bath can do more for the restoration of tired nerves than any other measure.

The neutral bath should be taken on retiring and should be preceded by light exercises for the stomach, the liver and the kidneys. It should be followed by deep abdominal breathing after retiring. The feet must be kept warm. The bath should continue from 15 to 30 minutes. The exact time will depend on the individual. Test the time by your individual case. Retire immediately and refreshing sleep is sure to follow. Finish the neutral bath with a cold towel bath to close the pores of the skin to avoid colds. Restored nerves, rested muscles, and recuperated brain power is sure to follow.

### THE TONIC BATH

The tonic bath holds its place midway between the hot and cold water bath. It may best be considered under the hot water bath. The shower bath is best for the tonic bath. After warming the body thoroughly by exercise, turn on the hot shower bath as hot as you can endure it for one minute, shut off the hot water and turn on the cold water for twenty seconds; shut off the cold water and turn on the hot water for one minute, turn off the hot water and turn on the cold for twenty seconds. This may be repeated for from two to five times. It is one of the best tonics known for the system. It is especially beneficial for morning fatigue, biliousness, sluggish circulation, colds, headaches, constipation, obesity, torpid liver, nervousness and sleeplessness. The tonic bath is especially beneficial for the hair. After the tonic bath, bend the head down, flush the face and head and pat them energetically for two minutes, then pull the hair gently all over the head. This will be found to be one of the best hair tonics.

The tonic bath is especially good for cold feet. Have a pan of hot and a pan of cold water, sufficiently deep for the water to reach above the ankle. Stand for one minute with one foot in the hot pan and one in the cold pan. Face about and place the hot foot in the cold pan, and the cold foot in the hot pan for one minute. Repeat these changes about ten times, finishing the foot bath with both feet in the cold pan, thoroughly rub and dry them and the cold feet will have become a thing of the past for that night at least. Repeat this for a few evenings until good circulation has been established.

### THE COLD BATH

The cold bath is Nature's own best tonic. It is an atonement to the body for the indoor life and the wearing of clothing, neither of which were contemplated by man's Creator. The friction and the tonic of the cold bath is a partial substitute for the fresh air, the sunshine and the rain, which the body was supposed to receive in the nude, in the original outdoor life. There is a tremendous contrast between a nude body in a garden of trees and fruits and flowers, and the same body in a stuffy bedroom, 9 by 10, with all windows and doors closed. In the former case, man's food was nuts and fruits, in the later it is pork and beans, cheese and cucumbers, weiners and sauerkraut, macaroni and muffins, pancakes and coffee, plum pudding and peanuts, Waldorf salad and shrimp bouillabaisse, raw oysters and boiled lobsters, bacon and eggs, boiled ham and pickles, baked potatoes and bananas, boiled beets and biscuits, turnips and tomatoes, pie a la mode, and cake eclair. These may not be named in their exact order of service, but the list will help us to some conception of the conglomerations given to the modern stomach. It is plain to be seen that these changed conditions demand some heroic treatment for the body that it may have something of its former normal conditions.

The cold bath comes as the best corrective for the outward conditions of the body. The inner conditions will be treated under diet and foods. The cold bath must be used with discrimination by all persons. The New Health Conscience recognizes personal individuality. Health culture does not attempt to mould every individual in the same cast-iron mould. Our breathing, our foods, our exercises, our bathing must be modified to meet our individual needs.

### CAUTION

Aged persons, children, thin people and persons afflicted with heart disease and kidney trouble should modify the cold bath, as the shock may be too great for their system, or they may not react well from the cold bath. The room should be warmed for this class of individuals. Light exercise should precede the cold bath. A friction bath with a coarse towel should immediately follow the cold bath, should this fail to bring the reaction, the next bath should be preceded by a hot towel bath after the exercise, then go over the body thoroughly with a wet towel from the cold water and the reaction is sure to follow. The cold towel bath or the splash bath from cold water, or standing in the bath tub and washing the whole body with the hands, beginning with the feet and hands and washing toward the body, then going thoroughly over the whole trunk, is the best method of taking the cold bath for these individuals. Always begin the cold bath by washing the face and the back of the neck in cold water. Babies and young children have the warm bath.

### COLD BATH FOR AVERAGE PERSONS

While the cold bath may be too much of a shock for certain individuals, which have been excluded from the ordinary cold bath, it is Nature's best tonic for the average individual. Man has weakened his physical condition by becoming a hot house plant. He has burdened himself with clothing and ofttimes ruined his health by wearing flannels. The wearing of flannels is man's most filthy habit as well as his greatest danger to health. Flannel holds all the moisture and filth and poison exhaled from the breathing pores of the skin, and finally clogs them so they can not perform their functions. They maintain a sweat box for the body, inviting colds, catarrh, la grippe and pneumonia. Flannels and feather beds are the undertaker's best friends. Discard them all. If you use the first you will soon employ the second.

The body can be tempered to bitter cold. Man can run naked through the winter snow or the burning tropics. God never intended man for a hot house plant. He tempers his body to the burning sands of the tropics or to the perpetual snows and ice of the Arctics. Many of our athletes bathe not only in cold water, but in ice water, and in the snow banks. Enslave the body by heat and clothing and you shackle the brain in the same proportion. An enslaved mind is the counterpart of an enslaved body. The woman with a hobbled skirt has also a hobbled brain. The Chinese woman with her bound feet has also a bound brain. Liberty and freedom are man's greatest asset. The mind partakes of the nature of the freedom of the body. Man must break the chain binding him to wrong habits and customs. Twentieth century civilization demands all the vigor of body and all the virility of mind we can summon. The cold bath brings vigor to the body and virility to the mind. It is an absolute necessity.

### SHOCK

Some physicians claim that the winter cold bath is too strenuous and that the shock is too great for the system. They site a few deaths in evidence. Over against these few isolated cases I would point you to that army, 400,000 strong, marching down to death annually from pulmonary diseases, all of which our best scientists and physicians tell us, are preventable diseases. We have abundant evidence that the cold bath has been the means of restoring health and vigor to thousands, who had become hot house plants, and were constant sufferers from colds, catarrh, la grippe, pneumonia and tuberculosis. They regained their normal health through the tonic of a cold bath.

Draughts, cold winds, wet feet and even hot air, have little terror to the individual whose system has been toned up by the tonic of a cold bath. Stir the blood with exercise, increase the action of the heart until the blood is thrown out to every artery and capillary on the whole surface of the body, tingling even the toes and the finger tips, purify this blood by an abundance of pure oxygen from hygienic breathing, throw off the carbonic acid gas from the lungs: the body thus revitalized by pure air and purified blood, warmed by exercise and increased circulation, will resist the shock from the cold bath, and come out invigorated and strengthened, carrying the vigor and buoyancy of youth.

## ATHLETES AND COLD BATHS

The members of the Athletic Boat Club rowed on the Harlem River in their athletic suits, arms and legs bared to February's winter blasts. The icicles formed on their oars. When their rowing task was over, they leaped into the icy waters of the Harlem with no ill effects. Not even a cold was recorded against them. You may see the members of the Bath Beach Swimming Club, in the dead of winter, at their favorite sport, snow-balling, or plunging into the icy waters with apparently no ill effect. They go plunging through the snows with bared shoulders, arms and legs, even bathing in the snow banks for the tonic of a cold bath.

Some of the members of the New York Athletic Club, with headquarters at Gravers Island, bathe the winter through. They exercise on land, walk out on the ice, with their axes chop holes through to running water, and deliberately plunge into the icy waters. In my Ohio home I have seen holes chopped through the ice of the Muskingum river for the purpose of baptizing ladies by immersion, and they have suffered no ill effects. We do not advocate such strenuous measures, neither do we advise the seeker after health to participate in these radical sports. Our advice is against these measures. We site them to show the fallacy of the "hot house plant" who always takes cold when he goes to church, and gets a breath of fresh air; who is laid up for a week from a two minutes' air bath; who contracts a fearful cold when he gets his feet wet and who has a chill that puts the ague to shame, when you even mention a cold bath. Take your cold bath daily. Keep the pores of your skin open. Let it perform its function of eliminating the poisons from the system. Give the body a five minutes air bath in your room, in the nude, after the bath. When possible give the skin a sun bath. Colds will disappear. Weakness will give place to vigor and strength. The whole system will be revitalized. The brain will become virile, keen and active with full power of concentration. Life will have in it that brilliancy and buoyancy that will make it a pleasure to live, rather than a burden to exist. Enjoy the tonic of a cold bath.

## CHEST PROTECTORS

Winter's real protection is not the chest protector, nor the back protector, nor the abdominal protector, although I found scores of them in use in the East. Winter's great safeguards are not heavy flannels to smother every pore of the skin and seal all poisons in the system, and carry that deadly moisture that only flannels can carry. Our real safeguards are not in furs and bearskins, and sealskin. The real vital protection comes from the body when in normal condition. Nature intended that these bodies should furnish their own best protection. The outer skin when in normal condition is armor clad against every invading foe and disease germ. The white blood corpuscles when in normal condition are able to fight to the death every disease germ that invades the thousand-mile channel of the blood stream. The methods of warfare of these millions of militant hosts known as the "White navy" are described elsewhere.

The normal care of the body means pure blood coursing through every artery and capillary of the body. It means proper nutrition for every cell, tissue, nerve, muscle, bone and brain. It means a normal food supply that will nourish the body, rather than an abnormal supply, that will paralyze every organ of the body, and clog the whole eliminating system. The morning cold bath for those who can endure it, is Nature's most invigorating tonic.

## TEMPERING THE BODY

The cold bath so tempers the body that it becomes armor clad against all pulmonary diseases, such as cold, catarrh, la grippe, pneumonia and tuberculosis. Colds are the starting point of practically all pulmonary diseases. The cause of colds is filth both inside and outside of the body. Lack of bathing clogs the pores of the skin, and drives all poisons that should be eliminated through the skin, to the liver, the kidneys and the intestines. The cold is Nature's method for burning up this filth. Nature enkindles an infantile fever to burn up the poisons that can not be eliminated through the unwashed skin, that can not be eliminated through the over-worked liver, and which cannot be eliminated by the kidneys, which are the shortest-lived organs of the whole body. Cold, which is the forerunner of all pulmonary diseases, comes to destroy a part of the filth of the body, by burning it up in the body. Colds may be caused by sudden fits of anger. Most of them are caused by over-eating. Many are caused by insufficient oxygen to develop the whole lungs so that portions are a prey to the disease germs.

The cold bath is the best preventative of cold, and all pulmonary diseases. It tempers the body so that it can endure changes. It produces a circulation of the blood through the whole system, first driving the blood from the skin to the internal organs, then causing the reaction which brings half the blood supply of the whole system into the skin, thus flushing and cleansing every artery and vein in the whole surface of the skin, opening the pores for the breathing of oxygen and the eliminating of the carbonic acid gas through the miniature lungs of the body. This invigoration of the body from within and from without makes the body immune from the deadly disease germ.

The morning cold bath is Nature's best tonic and man's best protection.

# THE LIVER, THE KIDNEYS, THE STOMACH

The functions of the liver, the kidneys, and the stomach are so vital to health, and so intimately associated in their work, that their importance needs special emphasis in health culture. The health of the whole body is jeopardized when these organs fail to perform their functions. So strenuous is their daily task, that it can be performed properly only when the body is preserved in normal condition. Our breathing, our bathing, our food, and our exercise, exert a marvelous influence over these organs. The function of the stomach is to prepare the food for assimiliation in the body. The functions of the liver and kidneys is to eliminate the waste and poisonous matter, not only from our food as it is carried into the blood stream by the 10,000,000 suction pumps of the intestines, but also to eliminate the decayed and broken down cells of the body. These organs must perform their functions of elimination, or death will be the immediate result.

## THE LIVER

The exercises for the liver, the kidneys, and the stomach are so closely connected, and these organs so vitally associated in their work, that an outline of the functions of these organs is necessary, before we take up the exercises that are imperative for a healthful condition of these organs. The abnormal conditions under which the body is forced to perform its work has rendered absolutely necessary certain hygienic protection for these organs. These abnormal conditions consist in the unnatural burden of clothes; man was not created as a hot house plant, but as a creature of the garden. Modern homes have forced upon man's system vitiated air, instead of the pure atmosphere of the outdoor life, so the body suffers from oxygen starvation, causing impure blood.

Instead of feeding on the nuts and fruits of Nature's storehouse, which afforded man ample exercise in the outdoor life to secure them, and which often compelled a short ration, and a long chase, man has become a recluse, he shuts himself within the narrow prison walls of his office, his shop, his store, his home, with practically all outdoor life excluded. He is robbed of his oxygen and his exercise. More than this, modern civilization has emptied the luxuries of a world into his storehouse. He has created an abnormal appetite. He pours into his stomach from two to four times the normal amount of food necessary for the nourishment of the body. This food cannot be digested or assimilated, so it is crowded into the waste-basket of the system, the colon, where it is bacterially digested, or literally rots. The fumes from this decaying food poisons the whole system. It paralyzes the eliminating organs of the whole system, and produces auto-intoxication. These eliminating organs, the skin, the liver, the kidneys, the bowels, the lungs, suffer partial paralysis, and cannot perform their functions. These abnormal conditions have rendered necessary heroic actions for the relief of these vital organs. Man's resort to poisonous drugs ofttimes further complicates conditions.

### PREVENTION

The principles of the New Health Conscience, as advocated by many of our best scientists and physicians, has found a better way. Their watchword is prevention rather than cure. They reduce the administration of the poisonous drugs to a minimum, and advocate the normal care of the body along Nature's original lines. They are teaching us to abandon the abnormal food supply, and to be lavish in our supply of oxygen. They tell us oxygen is life. They are teaching that these abnormal conditions are demanding exercises, that will enable these eliminating organs to perform their functions under their heavy stress of over-work

They are teaching us how to nurse these abused organs back to health and strength, through Nature's own methods. They are teaching us how to repair the damages wrought to the vital organs under these abnormal conditions. More than this, they are teaching us how to give a health education to our children, and to the pupils in our grammar schools, the students in our high schools and colleges, so that they may maintain the normal condition of the vital organs of the body, thus preventing disease, and preserving normal health.

The liver is the organ against which the most deadly assault has been made by these abnormal conditions of the body; the heart, the stomach, the kidneys, and the skin have been close seconds. The liver is the great chemical laboratory of the body. It secretes certain nutrients, and manufactures bile out of the poisonous and waste matter of the body carried to it by the portal circulation of the blood. The blood used in the digestive tract, the stomach, the duodenum, the pancreas and the intestines, becomes so polluted that a special circulatory system is provided for its purification, before it is carried to the heart and lungs. This blood which has done such strenuous work in the digestive organs is carried by the portal circulation to the liver, where the poisonous and waste matter is extracted, and much of this is manufactured into bile.

### A GREAT MANUFACTURING PLANT

The liver is the greatest manufacturing plant in the world for its size. It weighs but about 4½ pounds, yet it manufactures 2½ pounds of bile daily, or more than 900 pounds annually. The millions of red blood corpuscles that die daily are by the liver manufactured into bile. The liver transforms sugar into glycogen and stores it in her cells for future use. The blood which comes in contact with the poisonous decaying food from our abnormal food supply, gathers up a large amount of toxic, or poisonous matter, from the fermentation, in the stomach, the small intestines, and the colon; much of this poison is eliminated by the liver, while a large amount of it is oxydized, rendering it harmless, some portions are neutralized, and others so diluted that they are harmless. Many of these impurities are separated from the plasma of the blood, by the hepatic gland of the liver and manufactured into bile.

The liver continues to manufacture bile while the stomach is at rest. This is poured into the gall bladder and held in storage, until the food again comes into the stomach and begins to pass through the duodenum. The gall bladder then begins pouring its contents of bile into the duodenum, to be mixed with the food supply, and to aid in the emulsifying of the fats, as well as in their absorption. When the liver has more poisons than it can eliminate, it stores it in its own cells, dealing it out sparingly, so that it may not poison the whole system.

### DOUBLE BLOOD SUPPLY

The liver has a double blood supply, the portal vein and the hepatic artery. The portal vein has its origin in the minute capillaries of the stomach and the intestines. The intelligence of the cell life leads them to select from the food supply of the stomach and intestines the sugar and the protein, and carry them through the portal circulation direct to the liver for chemical action. The liver manufactures these nutrients into ''glycogen'' and turns a portion of them back into the blood stream. This glycogen is taken up by the capillaries of the hepatic vein and carried to all parts of the body and served to the various cells of tissue, muscle, nerve, bone, and brain, in a purely a la carte service, each cell selecting its own food supply from the great blood stream of a thousand miles. The fats are taken up by the lacteals, from the food supply in the stomach and intestines, and are carried around the liver, and are emptied into the regular channel of the veins, before the blood is poured into the heart, and sent once more on its mission through the arteries and capillaries of the blood stream.

So intricate, so delicate, so complex, and yet so profound is the work of this marvelous organ, and so strenuous is the task imposed upon it, as it performs its marvelous functions, every moment of the day and every moment of the night, and continues its operation at times for more than a hundred years; we do not wonder that our scientists and our physicians are pleading and demanding better treatment for this perpetual miracle of the human body. Certainly it is worthy of our highest consideration. As it performs such a marvelous service for us, we ought at least to afford it normal care, in the protection of the body. We ought to lighten its burden, by preserving the healthful condition of the skin, through the friction bath, the air bath, the sun bath, the sweat bath, the hot and cold water bath. We should aid it by furnishing the lungs, and the blood, and the cell life, an abundant supply of pure fresh air. We should lift from it the burden of an abnormal food supply, that more than doubles its strenuous work. We should furnish sufficient exercise for every organ of the body so that they may perform their proper functions of elimination, so that their work may not be thrust upon the liver. Man must make atonement for the abnormal conditions under which his body exists today, by the most strenuous provisions for its preservation. Prevention is the word of the hour.

## THE KIDNEYS

The kidneys are no less wonderful than the liver in their work of eliminating poison from the system. Their construction is even more wonderful. They are but two inches in width and four inches long and weigh but five ounces. The scientists tell us the combined length of the capillaries and drainage tubes of the kidneys amount to more than 15 miles in length. They also tell us they secrete daily about three pints of urine, surcharged with the deadly urea held in solution. While they are the shortest lived organs of the body, scientists tell us they would endure the performance of their functions 200 years, with the present condition of the body, under normal care. Nature never forgives the transgression of law against the kidneys. Obedience or penalty is imperatively demanded. They sound no alarm, they hoist no danger signal of distress. Their sudden demands for payment of overdrafts is inexorable. They are unflinching in their sentence, and also their execution of the death penalty. This sentence is ofttimes speedily executed. The drainage system of the kidneys, for the elimination of poisons, forming a sewage system more than fifteen miles in length, is one of the miracles of the human body. ''Surely, man is fearfully and wonderfully made.''

### FUNCTIONS OF THE KIDNEYS

The principle functions of the kidneys is the elimination of the poisonous urea, the various salts, and the elimination of water. No organ of the body secretes so much water as the kidneys. Kidney cells seem to have more than finite intelligence. They select from the blood the waste and poisonous elements, and eliminate them through the urinary channel.

Our food is the fuel supply of the body. After it is taken into the stomach and intestines it must be oxydized or burned in the body. The nutrients of the food supply are taken up into the blood stream of a thousand miles by the 10,000,000 suction pumps of the intestines. Every cell of the body must feed from the nutrients of the blood stream. Muscle cells select food for muscles, tissue cells select food for tissue, nerve cells select food for nerve, bone cells select food for the bone, while brain cells select food for the brain. These cells must generate heat and energy out of their food supply. The food supply selected by the various cells must be oxydized, or burned in the cell, to produce the necessary heat and energy. This combustion in every cell of the body maks the cell a chemical laboratory, or dynamo for the generation of heat and energy. Combustion even in the tiny cell leaves its ash, waste, and clinkers. These are called the nitrogen waste of the body. The nitrogen waste comes from consumed protein.

### NITROGEN ELIMINATION

The kidneys are the only organs of the body that can eliminate the nitrogen waste, except the elimination by the skin. This waste is called urea. The combustion in the cell life produces sufficient urea in the blood to soon cause death were it not for the elimination by the kidneys. The sugars, fats and starches of the food supply are completely burned up in the body, or oxydized. The proteins, the meats, cheese, beans, peas, eggs, nuts, etc., furnish the ash out of which the poisonous urea is manufactured. The elimination of these clinkers is a strenuous task for the kidneys. If the kidneys are sluggish and do not eliminate the urea perfectly, this poisons the blood, and produces headache, biliousness, gout, sciatica and rheumatism. These are called the filth diseases of the body, being caused by imperfect elimination. The kidneys and the skin are the only organs that can eliminate the poisonous urea. The kidneys also eliminate a portion of the waste and broken down tissues of the body. Cell life of the kidneys is able to discern the amount of nutrients demanded by the body. They allow sugar to pass unchallenged, until the amount exceeds what the body can assimilate, then the kidney cells begin their excretion, the surplus sugar is passed into the urinary canal and eliminated. If the body has a surplus amount of water, the kidneys secrete water and eliminate it through the same channel. The kidneys not only excrete the poisonous urea and eliminate it, but also many toxines. Many disease germs are arrested by the kidney cells and eliminated through the urine. The kidneys show a marvelous provision for the preservation of health.

Their strenuous work renders imperative the scientific, and hygienic care of the body, so that all other organs aiding in the elimination of poisonous waste, may properly perform their function, thus lightening the work of the kidneys. The skin must be kept in perfect condition by the air bath, the sun bath, the friction bath, the sweat bath, the hot and cold water baths. The food supply is of prime importance in lightening the work of the kidneys. The reduction of the food supply is imperative. We dig our graves with our teeth.

The kidneys like the liver must have sufficient mechanical exercise to overcome the burdens which a so-called twentieth century civilization has imposed upon them. A special series of exercises has been provided for the body which will aid in the restoration of the vital organs to their normal condition. Exercise is one of Nature's own remedies.

## THE STOMACH

*"So if unprejudiced, you scan*
*The goings of this clockwork man,*
*You find a hundred movements made*
*By fine devices in his head;*
*But 'tis the stomach's stroke*
*That tells his being what's o'clock."*

—ALMA, "*Progress of the Mind.*"

The stomach is generally regarded as the digestive organ of the body. It is more of a melting pot, or a storage plant where food is prepared for digestion. The stomach is lined with a membrane from ⅛ to ⅜ of an inch in thickness. This membrane is filled with glands that pour the gastric juices into the stomach as the food supply is received. This membrane is filled with blood when the food is passing into the stomach that the stomach may more readily aid in the process of digestion.

Outside of this membrane of the stomach pouring in the gastric juices is a layer of connective tissue in which is found the blood vessels, the nerve, and the lymph veins. This connective tissue joins the membrane to the coating of the muscle fiber which furnishes the power for the mechanical work of the stomach.

### MOTIONS OF THE STOMACH

At the upper or larger end of the stomach there is no motion except the contraction that gradually forces the food to the pylorus. The muscles increase in strength and thickness as they near the pylorus. Here begins what is known as the paristaltic action of the stomach. A contracting muscle movement is started every ten seconds, in the upper part of the stomach, which requires about forty seconds to reach the pylorus, where the food is discharged through the pylorus into the duodenum, passing from thence into the small intestines by the sphincter muscle relaxation which guards the opening until the food is prepared for passage. There are about three of these restrictive waves passing over the stomach at the same time. About 3600 per hour. This produces what is called the "churning of the stomach" which aids the saliva and the gastric juices in breaking up the food particles and preparing them for digestion. The lower portion of the stomach has a double digestive action, mechanical manipulation and chemical reduction, both allies of the digestive process.

The carbohydrates are melted and softened down and the connective tissues of animal food are dissolved. Into this mass of churned and distintegrated food is poured the secretion of the gastric juices, until the whole mass has become a creamy substance called chyme. The food is not yet digested but only in the process of digestion. During this time and preceding it the liver has been manufacturing gall and storing it in the gall bladder. The guardian cell of the bile duct is now opened and this manufactured bile is poured into the duodenum. At the same time the pancreatic duct from the pancreas is opened, and the pancreatic juices are poured into the chyme of the duodenum. This pancreatic juice is the main factor in the digestion of protein foods. It is strongly alkaline, and neutralizes the acids from the chyme, transforming it into an alkaline substance called chyle.

## ASSIMILATION

The food supply, with the gastric juices, the saliva, the bile, the pancreatic juices, are all poured into the small intestines, there to receive the intestinal juices. The real work of assimilation now begins. A small amount of the sugars and the starches were taken up by the capillaries of the stomach, the real feeding of the cell life of the body begins in the small intestines. The 10,000,000 suction pumps of the membrane of the small intestines, absorb this chyle into the lymph stream; it is then carried to every portion of the 1000 miles of the blood stream. Every cell of tissue, nerve, muscle, bone and brain feed from this blood stream, on the nutrients carried from the small intestines. This lymph passes through the walls of the capillaries to every cell of the body to feed and nourish them. The service is purely a la carte. Each cell selects its own food. Tissue cells select tissue food, nerve cells select nerve food, muscle cells select muscle food, bone cells select bone food, brain cells select brain food. The blood stream also carries to these cells the oxygen from the lungs. It is filtered through the 725,000,000 air sacs of the lungs, then carried by the arteries to the capillaries and is filtered through the walls of the capillaries to the cell life. The oxygen is carried through the arteries by the red blood corpuscles and by them is fed to the cell life.

## OXIDATION

The food of the body, though carried to the cell life, is absolutely powerless to produce either heat or energy until it is oxydized, or burned in the cell life by the combustion caused by oxygen. Our food is the fuel supply of the body. The oxygen is the fire that consumes it, thus generating heat and energy for bodily use. This lays a new emphasis on the imperative demand for a generous supply of oxygen for the body. Oxygen starvation not only is responsible for the 400,000 deaths annually from pulmonary diseases, but it is also responsible for many thousands of deaths from malnutrition, caused from insufficient oxygen to generate heat and energy in the cell life, from the food supply therein. Food in the cell life without oxygen only clogs the system and adds to the burden of the eliminating organs of the body.

### DIGESTIVE JUICES

It is estimated that there is poured down the digestive tube daily, 3 pints of saliva, 10 pints of gastric juices, 3 pints of bile, 2 pints of pancreatic juice, and 5 pints of liquid food and drink, making almost three gallons per day of liquid food, drink, and secreted juices. All this must be absorbed and carried through the various channels of the body, and must be either fed to the cell life or eliminated by the eliminating organs of the body.

Each of the digestive juices has its own peculiar mission. Saliva acts on the sugars and starches in the digestive processes, the gastric juices act on the proteins, lean meat, peas, beans, cheese, eggs, nuts etc., the bile acts on the fat, while the pancreatic juices act on all three, but especially on the animal tissue. All this mass of food and these digestive juices are poured into the small intestines. They then begin a rythmic movement, with waves following in quick succession, about one every ten seconds; this is accompanied by a swaying, or peristaltic action, which breaks the already dissolved food into thousands of minute particles. It is now ready to be pumped into the great blood stream.

### CARE OF THE VITAL ORGANS

All of these delicate and intricate processes of digestion and assimilation and elimination of our food supply, and the generation of heat and energy for the demands of the body, together with the momentous task imposed on the various vital organs of the body, reveal to us the imperative demand for preserving these organs in normal, healthful condition. The abnormal conditions of life under which we live render necessary every aid possible to the work of these vital organs. A general system of exercise that will reach every organ, every muscle, every nerve, every cell of the whole body is the best aid we can possibly render. Special exercises for the liver, the kidneys, the stomach and the intestines are of vital importance. These scientific and hygienic exercises recommended by our best specialists, who have made a thorough study of the demands of the body, should not be ignored.

# CIRCULATION OF THE BLOOD

*"There are three wicks to the lamp of a man's life: brain, blood and breath. Press the brain a little, its light goes out, followed by all the others. Stop the heart a minute, and out go all three of the wicks. Choke the air out of the lungs, and presently the fluid ceases to supply the other centers of the flame, and all is soon stagnation, cold and darkness."*—HOLMES, "*Professor at the Breakfast Table.*"

Moses declared "The blood is the life." Scientists of the twentieth century proclaim this statement to be true. The circulation of the blood is one of the standing miracles of the human body to all scientists. Every cell of the whole body must feed from the food supply of this blood stream of a thousand miles. It feeds the cell life with both food and oxygen. The blood stream not only carries the elements of life, food and oxygen, for the body, but it also carries the elements of death to the deadly disease germ continually assaulting the body. When the body is in normal health it is armor clad against the deadly assault of every disease germ, whether from within or from without.

The average weight of the blood in the body is 25 pounds. Every heart throb forces six ounces of blood out through the arteries and capillaries of the body. The 100,000 daily heart throbs lift 600,000 ounces of blood daily; this amounts to 37,500 pounds, or 18.7 tons daily. The human heart is the mightiest engine of earth, considering its size. It lifts 6,750 tons of blood annually, or 540,000 tons in a lifetime of eighty years. This blood must course through the entire length of the blood stream.

### LIFE AND DEATH

The blood stream carries both the elements of life and death. It carries the elements of life in the nutrients of food taken up into the blood stream, from the intestines, by the 10,000,000 suction pumps of the membrane of the intestines. It carries also the element of life in the oxygen breathed in through the 725,000,000 air sacs of the lungs. The natural elements of death in the blood are not for the body, but for the destruction of the deadly disease germ continually assaulting and preying on the cell life of the body. The blood is made up of the clear portion called the plasma and the red and white blood corpuscles, the cells of the blood. The plasma forms two-thirds of the volume of the blood and the red and white blood corpuscles one-third.

It is estimated that there are 30,000 million red blood corpuscles in the blood and that there are 60,000,000 white blood corpuscles. The red blood corpuscles are hollow disks and are found in rows or rolls like stacks of coin. They give the color to the blood. The red blood corpuscles carry oxygen from the lungs to every cell of tissue, nerve, muscle, bone and brain. They also carry the poisonous carbonic acid gas to the lungs and pores of the skin for elimination.

### WHITE BLOOD CORPUSCLES

The white blood corpuscles patrol the thousand miles of the blood stream as the body defenders. They are the destroyers of the deadly microbe and the disease germ. They serve as scavengers of the body as well as the defenders against an invading foe. Like the buzzard they feed on the refuse from life's great battle field. They literally slay and eat. They have been called the "White Navy," because they are ferocious marine warriors patrolling the blood stream in search of man's most deadly enemy, the disease germ. With normal care of the body they are always conquerors. Only ignorance, wilful neglect and criminal abuse can number them with the vanquished in life's great battle.

These marine warriors are called the Macrophags, Microphags, and the Lewcocites. As their name indicates they are Irish and form a good police force for the body. These wandering ferocious warriors patrol the blood stream day and night in search of man's deadly enemy, the disease germ. They are so minute that they pursue the enemy through the fabric and tissue of muscle, nerve, bone and brain. When unequal to the emergency single handed, they have the power to fuse their bodies together and fight in a solid phalanx.

The blood furnishes an anæsthetic by which the disease germs are chloroformed. In pneumonia and some other malignant diseases it is often several days before these wandering warriors will assault the deadly disease germ. The body is manufacturing anti-toxines. ''Opsonin,'' which develops in pneumonia, for the aid of the destruction of the pneumonia germ, is one of the most prominent of these ferments. These warriors will not assault the pneumonia germs until the body has developed this ferment. They martial their hosts literally by the million. They form their marine warriors by companies, by battalions, by divisions, and by armies. When this opsonium is developed they fall upon the enemy with the ferociousness of the tiger. The pneumonia germs are literally slain by the millions. This brings on what is called ''Passing the crisis.'' After this decisive battle the patient speedily recovers.

## IN BATTLE ARRAY

When these marine warriors are unable to destroy an enemy strongly entrenched in the body, they lay siege, just as the great armies of the world have laid siege, in some of the decisive battles of the world. Like Schley and Sampson they literally ''bottle-up the enemy,'' as the Spanish fleet was bottled up at Santiago. They arrange their battalions and divisions around the enemy in battle array. They are arranged with military precision, the first rank pitches its battle line near the stronghold of the enemy; another division throws a battle line a little farther out; still another division flings their battle line a little farther out, doing service as the rear guard of this military host. As the battle rages and the enemy falls, they build their breastworks out of the bodies of their enemies, and their own comrades slain in conflict.

The massing of these warriors in their divisions is shown by the swelling around a wound in the body. When they have successfully imprisoned their enemies and have closed in upon them, and literally slain them by the millions, the next problem is the clearing of the battlefield.

### CLEARING THE BATTLEFIELD

We said they were scavengers as well as wandering warriors. So marvelous is the provision of the Infinite for the preservation of the health of the body that he has not only provided these warriors for the defense of the body, and taught them the military tactics on which the armies of the greatest nations of the earth have made no improvement, but he has provided them a means of clearing the battlefield. The bodies of these military heroes emit a ferment, that dissolves the bodies of their slain antagonists. This solution is taken up into the blood stream and eliminated through the eliminating organs of the system. The liver can manufacture bile and urea out of the dead bodies of the assaulting army slain on the field of battle. The skin and the intestines can eliminate the poisons generated in their dissolution. Out of the surplus waste and the tissues of the bodies destroyed in the carnage of battle they generate pus and eliminate through the skin on the site of the battlefield. Surely such marvelous provision of the Infinite for the preservation of the health of the body demands that we give it at least normal care so that it may properly perform its functions. Exercise preserves the normal condition of the body under abnormal circumstances.

The circulation of the blood is maintained by the marvels of the human heart, and the muscular contractions of the arteries. No mechanism of inventive genius approaches the marvel of the human heart.

### THE HEART AND ITS FUNCTIONS

*"We live in deeds, not years; in thoughts, not breaths;*
*In feelings, not in figures on a dial.*
*We should count time by heart-throbs. He most lives*
*Who thinks most, lives the noblest, acts the best.*
*And he whose heart beats quickest lives the longest;*
*Lives in one hour more than in years do some*
*Whose fat blood sleeps as it slips through their veins."*
—J. P. BAILEY.

The work of the human heart is one of the marvels of the human brain. The average weight of this wonderful muscle is but 10 ounces, yet it forces 6 ounces of blood out into the thousand miles of the blood stream every heart beat. This forces the entire 25 pounds of blood of the human body through the thousand miles of the blood stream every minute. This means that this muscle, weighing but ten ounces, forces more than 1500 pounds of blood through this blood stream each hour, lifting 36,000 pounds of blood daily, forcing it through the blood stream, or 6,570 tons annually, or more than 500,000 tons of blood forced through the blood stream of a thousand miles in a life time of 80 years. The first day of a baby's life this wonderful muscle contracts and expands 200,000 times. The average adult heart throbs on at the rate of 37,000,000 beats annually. This organ, weighing but 10 ounces, often performs its marvelous task uninterrupted for a hudnred years, throbbing on through every moment of the day and night, never ceasing.

### PREMATURE DEATH

When death finally silences this mighty engine it ceases to beat, not because of over work, but because of over-eating and an abnormal food supply, which has generated poisonous gases thus poisoning the whole system. The greatest scientists and phyicians declare that our great athletes of national and international reputation, die not from over-exercise, but from over-eating. The stomach, the intestines, the liver and the kidneys form a great manufacturing plant. They manufacture blood to sustain the vital forces of the body. New blood must be manufactured daily to meet life's emergencies, and generate the necessary heat and energy to sustain the body. The blood is filled with millions of delicate, minute cells, the red and the white blood corpuscles.

Scientists have estimated that there are 30,000 million red blood corpuscles, and 60,000,000 white blood corpuscles in the human body. The red cells carry the oxygen from the lungs to the cell life of the body; they also carry the poisonous carbonic acid gas from the cells where combustion has taken place to generate the heat and energy for the body, to the lungs for elimination. Life would be impossible without this elimination of this poisonous gas. The work of these blood cells is so hazardous that millions of them live less than a single day.

### NEW CELLS

The reinforcement of this vast army demands the creation of 8000 new cells every second, 500,000 cells every minute, 30,000,000 cells every hour, 700,000,000 cells every day. That the human heart with its weight of ten ounces may be able to force more than 18 tons of blood daily through the thousand miles of the blood stream is the great marvel of science. Do you wonder that it is absolutely essential that we keep the body in a healthful and normal condition and that we aid the heart in every way possible to perform this gigantic and colossal task? The New Health Conscience means the normal care of the body.

The heart demands pure blood, clean arteries, capillaries, and veins, and nourishing food in normal quantities, as well as an abundant supply of oxygen in order that it may perform this herculean task. Pumping the blood through the thousand miles of the blood stream is made easy by scientific breathing and bathing, by hygienic feeding and exercise. We may increase the circulation of the blood by hot and cold baths, by the air bath, the sun bath, the friction bath, and the sweat bath. The skin, which weighs about 17 pounds, can hold half the blood supply of the whole body. The cold bath forces the blood from the skin to the internal organs. The reaction forces the blood from the internal organs back to the skin, flushing all the arteries, capillaries and veins. In this flushing the red blood corpuscles not only carry off the poisonous carbonic acid gas for elimination, but they carry off the waste and broken down tissue and cells of the body.

### ACCELERATING CIRCULATION

Exercise forces a more vigorous circulation of the blood, and a more complete flushing of all arteries, capillaries and veins. This stimulates the lungs, the heart, the skin, the stomach, the intestines, the liver and the kidneys. It quickens the circulation of the blood in the tissues, the nerves, the muscles, and the brain. This flushing of the blood stream renders the work of the heart less strenuous, just as the cleaning of the water pipes permits a stronger flow of purer water. Both the cold bath and the exercise must be given in moderation, especially to persons who have passed forty, but they must absolutely be given if health is desired. They are needed more after this period than at any other time. Fatigue is the danger signal for exercise.

### REGULATING THE HEART

Scientific breathing increases the heart power. Accelerate the breathing and you accelerate the heart beat. Retard the breathing and you retard the heart beat. The heart is developed by exercise in breathing. It is strengthened by exercise just as any other muscle of the body is strengthened by exercise. This exercise must be moderate, but it is absolutely essential that the exercise be given. You can paralyze the heart by inaction just as you can paralyze the arm by binding it in one position. Many curable cases of heart disease have been rendered incurable by lack of exercise and proper care of the body. Many pronounce the death sentence on themselves, or have it pronounced on them by others the moment any disorder of the heart is discovered. This suspended death sentence hangs over them like a pall, barring all efforts of recuperation. Ofttimes there is no organic heart trouble whatever.

### GAS PRESSURE

Gas pressure from an abnormal food supply will often causes intense pain around the heart. This gas pressure is caused by an abnormal food supply which can not be digested, but which must be crowded down into the stomach, intestines, and colon, which is the waste basket of the digestive organs, and must be bacterially digested, or in other words it must decompose and rot in the intestines. This forms a poisonous gas that not only brings auto-intoxication, poisoning the brain and the whole system, but it crowds the other organs around the heart, producing intense pain. A few exercises for the abdomen, intestines, and stomach will relieve the gas pressure and the heart disease is gone. Proper exercising and a normal food supply will prevent the recurrence of this accumulation of gas and the so-called heart disease is cured.

### HEART TONIC

The best heart tonic and the best cure for all inorganic heart trouble is to tone up the whole system, the cell life, the tissue life, the nerve life, the muscle life, the lung life, and the brain life, thus you produce a normal condition in the body, and you have greatly lessened the strenuous heart action. Do this by scientific bathing so that the elimination of the poisonous and waste matter through the 30 miles of sewage emptying on the surface of the body is perfect. So that the more than 3,000,000 pores of the body are open. Do it by hygienic breathing so that you may have 5½ inches chest expansion, and 350 cubic inches of lung capacity, so that you may fill the 725,000,000 air sacs of the lungs with pure oxygen to purify the blood and eliminate the poisonous carbonic acid gas. Do it by scientific exercise that will place every nerve, muscle, tissue, and organ of the body in prime condition. Do it by a normal supply of food that will feed and nourish the cell life without producing auto-intoxication and poisoning the whole system by an over food supply. Do it by a cheerful, happy disposition. By the absence of worry, anger, malice, hatred, jealousy and fear.

### DEATH SENTENCE

The victim of heart disease should be made to feel that the impending death sentence imposed upon him is a "Bogie man." Many a victim of heart disease has come to feel, with the individual whose parents have died with tuberculosis, that their case is absolutely hopeless. We are just learning the great truth that no individual inherits tuberculosis of the lungs. They may inherit a weak lung that is susceptible to the assaults of tubercular baccilus. The lungs may be developed until they are armor proof against the assaults of this deadly disease germ. So there may be inorganic heart disease that may readily be overcome by scientific care of the body. Give the individual a chance. Remove the death sentence. Thousands of persons have been doomed to die with heart disease who have lived for a quarter or half a century and then died of some other disease. Treat the heart muscle as you would treat any other muscle of the body and give it a chance for recuperation.

The circulation of the blood is maintained by the marvels of the human heart and the muscular contraction of the arteries. No mechanism of inventive genius approaches that of the human heart.

### HEART ENERGY

Considering its size it is the mightiest engine of the planet. The expended energy of the heart in a single hour would lift its own weight to an altitude of 20,000 feet. The heart throbs 100,000 times daily, 40,000,000 beats per annum, 1,000,000,000 heart throbs in an ordinary lifetime. During this period it has repaired its own waste and lifted six ounces of blood with each heart throb, lifting more than 500,000 tons of blood in a life of eighty years. The heart maintains a signal service station and beats faster or slower according to the demands for blood from the remote portions of the body and the various vital organs. The nerves of the heart regulate the flow of blood to meet the demands of the body. Exercised muscles signal for more blood to meet the demands of their task, the message is flashed to the nervous system, then to the heart, and the accelerated heart beat furnishes the needed blood supply. The same is true of the stomach, the liver, the kidneys, and the brain. When the blood is especially active in one of these organs the other should be at comparative rest. You can't digest your food and do heavy brain work at the same time. Both organs demand a full blood supply for their heavy tasks.

## FOUR SYSTEMS OF BLOOD CIRCULATION

"*What is Life?*
*Am I but what I seem—mere flesh and blood?*
*A branching channel, and a mazy flood?*
*The purple stream that through my vessels glides,*
*Dull and unconscious flows, like common tides.*
*The pipes, through which the circling juices stray,*
*Are not that thinking I, no more than they.*
*This frame, comparted with transcendent skill,*
*Of moving joints, obedient to my will,*
*Nursed from the fruitful globe, like yonder tree,*
*Waxes and wastes; I call it mine, not me.*
*New matter still the mouldering mass sustains,*
*The mansion changed, the tenant still remains.*
*And from the fleeting stream, repaired by food,*
*Distinct, as is the swimmer from the flood.*"

—ARBUTHNOT.

There are four systems for the circulation of the blood. The pulmonary system, the systemic system, the portal system, and the lymphatic system.

### PULMONARY CIRCULATION

The pulmonary system supplies the lungs with the necessary amount of blood. The blood on its return from the body is emptied into the right auricle, or upper chamber of the heart. While the heart is at rest the valve opens and the blood drops into the right ventricle, or lower chamber of the heart. The muscular contraction of the heart forces the blood into the pulmonary artery which carries it to the minute capillaries of the lungs. This blood touches the inner side of the 725,000,000 air sacs of the lungs and discharges through them the poisonous carbonic acid gas. It filters through the side walls of these air sacs like smoke filtering through a lace curtain. The fresh oxygen inhaled through the lungs filters through these same air sacs and into the blood. It filters into the capillaries, and passes into the pulmonary vein, and is carried to the left auricle of the heart. This is purified blood. It discharged its carbonic acid gas through the delicate walls of the millions of air sacs in the lungs and received through the same delicate walls sufficient oxygen to purify the blood.

### SYSTEMIC CIRCULATION

This purified blood drops from the left auricle of the heart, while the heart is at rest, into the left ventricle. Once more the muscles of the heart contract and this pure blood is forced into the aorta, the great arching artery of the chest. The aorta sends its branches to all portions of the body, carrying the pure blood to the remotest capillary. The blood is forced on through the arteries by a wave-like motion of the arteries carrying the blood through its mysterious channels of a thousand miles.

It carries its oxygen through the red blood corpuscles to every organ of the body and feeds every cell of muscle, tissue, nerve, bone and brain. It acts as both sewer and smokestack, carrying off the waste matter from the broken down cells, and the fumes of the combustion in the cell life, the carbonic acid gas. This blood filters back into the veins and is returned to the starting point, the right auricle of the heart, thus completing its circulation.

### PORTAL CIRCULATION

The digestive tract, the stomach, the liver, the kidneys, and the intestines have the most perilous mission for the blood. The blood in the digestive tract becomes so polluted in its digestive work that it has to be diverted to what is called the portal circulation through which it is carried to the liver, that great filtering plant of the body where the poisonous and waste matter may be eliminated from the general circulation, and manufactured into bile. The deadly urea is extracted from this polluted blood and is eliminated through the kidneys. When these poisons have been extracted this blood is gathered up by the hepatic circulation and the blood is carried back to the regular channel.

### LYMPHATIC CIRCULATION

As the blood filters into the capillaries the liquid portion, or the plasma, leaks out into the tissues to bathe and feed the cell life, the red and white cells only remaining in the capillaries. After feeding the cell life this serum gathers up the poisons excreted from the cell in oxidation and carries it back through the veins for elimination through the regular eliminating organs of the body. Many poisons and disease germs are destroyed in the lymph glands, as the blood serum passes through the lymph channels on its way back to the heart, through the veins. The entire blood supply of the body, twenty-five pounds, is supposed to pass through the heart every minute.

### PURIFYING THE BLOOD

Blood is purified by eliminating the accumulated poisons. We may aid in this by drinking pure water By eating pure foods in limited quantities. Oxygen is Nature's great germicide. It means death to the disease germ. A generous supply of pure oxygen is the best blood purifier. The friction bath, the air bath, the sun bath, the sweat bath, the hot and cold water bath are great blood purifiers. Proper elimination of poisons through the skin and the bowels purifies the blood.

The sweat bath three times per week, followed by the hot water bath is a great blood purifier. The blood can't be purified by a bottle of alcohol with some iron rust, some celery, or sarsaparilla dumped into it; all you get from this is the stimulant of the alcohol; you get on a miniature drunk. The system needs iron, but you can't drink it out of a bottle, or lick it from a lamp post. Get it from Nature's own laboratory. You will find abundance of mineral salts in celery, raw tomatoes, water cress, spinach, and lettuce. These are Nature's blood purifiers.

### FRUIT DIET

A fruit diet for three days is one of Nature's best blood purifiers. Eat ½ pounds of bright, red, crisp apples at noon, and another ½ pound at night, with no breakfast; drink a glass of buttermilk at 10 o'clock and another one at 4 o'clock, with what pure water you need and you will have a better blood purifier than any alcohol dope you can purchase. A fruit diet of cherries, plums, grapes, berries or peaches in their season is good as a blood purifier. You must eat nothing else when you are on a three days' fruit diet. Continue the fruit diet after the first three days, but other foods may then be taken in small quantities.

A better blood purifier than this is a three days' fast. Take a good cathartic the first morning to thoroughly clean out the bowels, drink as much water as you feel you need, eat no food for three days, perform your regular task, fix your mind on the fast, not on food; rest your digestive organs. Give your eliminating organs a chance to catch up with their work. Eliminate all decaying food from the stomach, the intestines and bowels, and you will find a blood purifier worth while.

Pure blood is the product of the normal care of the body through scientific breathing, hygienic bathing, a normal food supply with a well balanced ration, and a system of health culture exercises that will preserve the normal activity of every cell of tissue, nerve, muscle, organ, and brain.

## BLOOD AND BEAUTY

*"Beauty is Nature's seal of approval of wholesomeness . . . Beauty is the surface reflection of vigor, wholesomeness and purity."*—HUTCHINSON.

There is but one recipe for beauty, and that is good blood. Some individuals inherit a fine complexion, just as others inherit a strong constitution. The only way to maintain either is to so care for the body that the blood may be maintained pure. Underneath the skin is a series of oily fat cushions, covering the valleys and the hills, rounding out a symmetrical form and face. Coursing through this form and face are thousands of arteries and capillaries, carrying the pure rich blood from heart and lungs, to feed the cells, tissues, nerves and muscles of the skin, covering the face. The face, in the complexion of the skin, will reflect the character of the blood. The blood will reflect the care of the body. It will reflect whether the lungs have been starved for oxygen, or have been generously fed. It will indicate the hygienic condition of the body through bathing, and will tell us as to its cleanliness or filth. It will indicate the character and quality of our food. It will tell us whether we are gluttons, or feeding on a sane, well balanced ration. We talk of "Skin food" for the complexion and "Brain food" for the mind; as well talk of "Corn food" for the corns. There is what is known as the "potato belly," but this comes from the quantity of the food, not the quality.

### BEAUTY FOOD

The only food for beauty and for the complexion is that normal care of the body, by breathing, bathing, exercising and dieting, together with that peace of mind, which shall cause a full supply of rich red blood to course through the arteries and veins, destroying disease germs and feeding every cell of tissue, nerve, muscle, bone and brain, with the rich red blood of health. This will bring the flash of the diamond to the eye, the glow of the pearl and the ruby to the cheeks, and the blush of the rose to the lips. This is Nature's real cosmetic, and the only ''Skin food'' that can bring the charm of beauty, and the glow of a pure complexion to the cheeks. There are many things that will help to preserve this beauty, but nothing save normal care of the body can create it. Blood and beauty are synonymous terms.

The scientists tell us that the lower muscles of our face reflect our digestion and our food supply, and that they are controlled by the same. We presume this is the reason that when we look at the lower portion of some faces we imagine we can hear the grunting of the hog. When we look at other faces we hear the bleating of the sheep and the lowing of the kine; while still other faces remind us of the crowing of the cock. The muscles of the middle portion of the face are entirely controlled by the oxygen supply of the lungs, the blood and the cell life. The muscles of the upper portion of the face are said to be controlled by, and reflect our sense of vision, and our perceptions of the brain. What we eat, what we breathe, what we see, and what we think, moulds our countenance. Blood is the handwriting on the wall that makes for beauty or ashes in the face.

### BEAUTY

Beauty of complexion is a loan from the great blood stream of a thousand miles, the product of stomach, heart and lungs. Interest on this loan must be paid daily in nature's lotions of fresh air, bright sunshine, sparkling cold water, pure food and a sunny disposition. The air, the sunshine and the water must be administered in copious baths. The pure food must be administered sparingly, in homeopathic doses.

The delicate tints of the rose and its rich perfume are the product of the soil, well watered, an abundance of fresh air, and a wealth of sunshine. Her delicate pigments of color are extracted from the soil, the sunshine and the oxygen; they are fed to the rose through her life blood, called the sap of the rosebush. So the pigments for the beautiful coloring of a rich complexion are not external, but internal; these delicate colors are not brushed on from the outside as we paint a house; they are the product of the blood and the life. "Blood will tell."

### THE SECRET OF BEAUTY

This charm of beauty in the complexion is the result of that infinite procession of red blood corpuscles, coursing through arteries, veins and capillaries, feeding the minute cells of tissue, nerve and muscle. These, aided by that marine army of braves, called the "White Navy," the white blood corpuscles, patroling the thousand mile course of the blood stream, slaying the deadly disease germ, make possible the charm and beauty which nature alone can give. The virtue is in the procession. Halt but for a moment these millions of blood cells in their onward march, and the once healthful face turns dark and deathlike. Lift the flood gates and let out the blood from the great blood stream, or stop that great central pump, the heart, and the face becomes pale as marble and ghastly as the grave. Truly the blood is the life. Pure blood coursing through the veins and arteries of a body that has been cared for by scientific breathing, and by hygienic bathing, by proper exercise and by a normal food supply well selected, will bring the charm and beauty to the complexion that nothing else in all the world can produce. We find the secret of beauty in the inner life. It is the product of a normal body, and a contented mind.

# SELECTING EXERCISES

> *"By ceaseless action all that is subsists,*
> *Constant rotation of th' unwearied wheel,*
> *That Nature rides upon, maintains her health,*
> *Her beauty, her fertility. She dreads*
> *An instant's pause, and lives but while she moves."*
> —COWPER.

Exercises in the field of health culture are like drugs in the field of medicine. Each physician selects what he believes to be the best drug for the individual case. So in the field of health culture each individual selects the exercise which he believes to be the best for the purpose for which he selects it. We have gleaned from many fields and would not knowingly pluck a star from any crown without giving due credit. Elsewhere we shall enumerate the men who have been most helpful to us in the study of this great problem of health. We believe it to be every man's duty to do all within his power to relieve human suffering, to alleviate human pain, and above all to aid in the prevention of disease. We are simply passing on the gospel of good health, through health culture, in the interest of humanity.

## THE SPINAL COLUMN

The normal back-bone is man's citadel and tower of strength. It may also become the most vulnerable point of the whole body. In common parlance it takes not a "stiff" back-bone but a strong back-bone to meet the emergencies of the twentieth century civilization. The man with a "stiff" back-bone is about as useless as an individual with a cotton string for a back-bone. The two are about on a par with the man in the beginning of the race described by the little lad who said, "When God made man he wanted to make a woman also, but he didn't have any more stuff, so he took out man's back-bone and made a woman out of that."

The back feels the drawing of the kidneys and the liver for their vital strength. It feels the burden of the nervous system drawing so heavily upon its reserve force. It is the center of the telegraphic nervous system for the whole body. It is the tower of strength for the whole body. The storehouse of supplies for all energy.

The demand of the whole body and brain on the back are so intensely strenuous that only the most scientific care can preserve it in normal strength. The cords of the back shorten as do the cords of the legs, so we become old in our back vitality, before we reach our prime. Personally I suffered almost the tortures of the damned in the intense pains of my own back when I became almost a physical and nervous wreck in my prime, although I had inherited almost an iron constitution. I did the most strenuous work, with scarcely a single sick day for more than thirty years.

### SUDDEN COLLAPSE

My breakdown came "Like a bolt from the blue." Many of my friends believed that my work was not only finished, but that my days were numbered. I believe they would have been had I not adopted this system which gave me a new lease of life through health culture teaching, by which I was fully restored to health and vigor. The excruciating pains of my head and back would throw me into a horrid nightmare many times per night. I found relief through this system of health culture, which has been modified by my own interpretation, after extensive study of the various principles and systems of health culture.

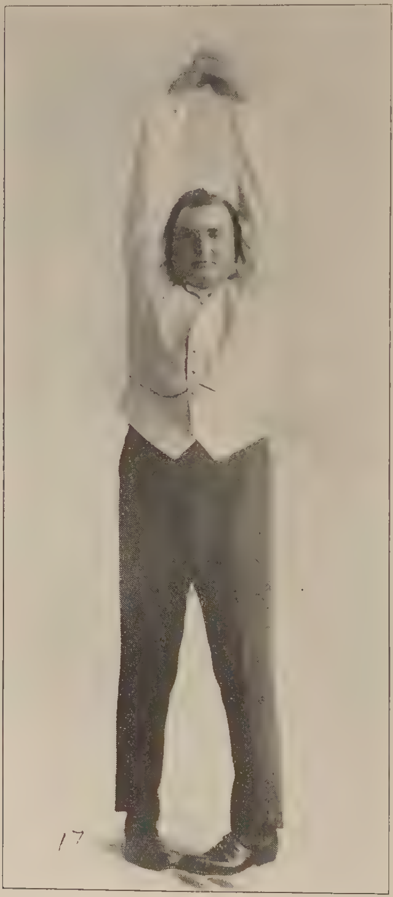
The exercise of touching the hands to the floor without bending the knees, is one of a series of exercises that lend new vitality, vigor and life to the exhausted back-bone.

The accompanying cut, No. 19, shows my first attempt. I could hardly reach my knees as I stooped over my abdomen, or rather a balloon fifty-three inches around the waist, with an avoirdupois of about 246 pounds. My arms were too short for my legs when it came to touching the floor. I was tied and bound over the small of the back, with seeming cords of steel. I made the attempt to touch the floor, gaining a little daily, by strenuous efforts. I had daily the percussion, or spatting, of the back, which seemed to loosen the taut cords vibrating over the small of the back. I finally found the "stiff back" yielding, as well as the balloon. In less than two months all the pains disappeared, and I found myself on the highway to recovery. This was but one step in the series of development and recuperation of the back; and the whole system of exercise for the liver, the kidneys and the stomach, was only another step toward the principles of the New Health Conscience, which means the normal care of the body through scientific breathing, hygienic bathing, a sane system of diet and exercise, together with a proper attitude of mind, which made possible my complete restoration to health and vigor.

ANSWERING THE CALL OF THE WILD

J. Paul Elliott ready for a health hike in the high Sierras, accompanied by Florence Elliott—his wife—and two companions. Physical director and instructor of one of the largest health culture classes in the United States, numbering about 600 members, when nineteen years of age. This club was in Temple Baptist Church, Los Angeles, Dr. J. Whitcomb Brougher, pastor.

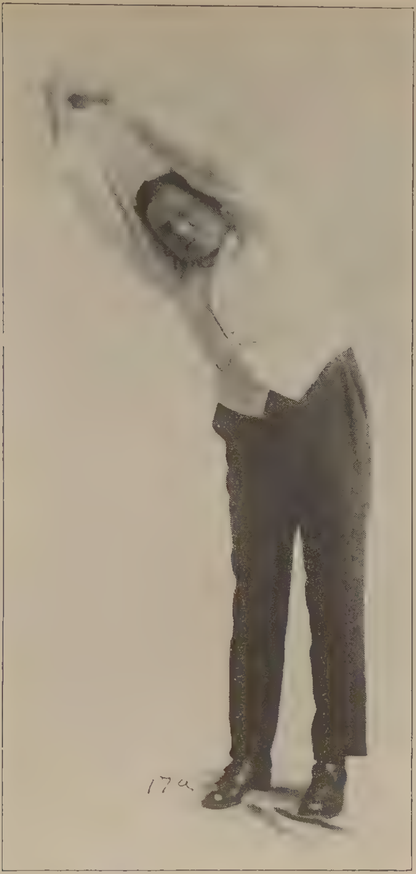
# EXERCISES FOR THE LIVER, KIDNEYS AND STOMACH



**Cut No. 17**

### HEAVY MASSAGE OF LIVER, KIDNEYS, STOMACH AND INTESTINES

Exercise No. 17. Posture. Correct standing position. Arms clasped high over the head. Toes together, heels apart. Stretch to the fullest capacity. Maintaining the position of the arms, bend far



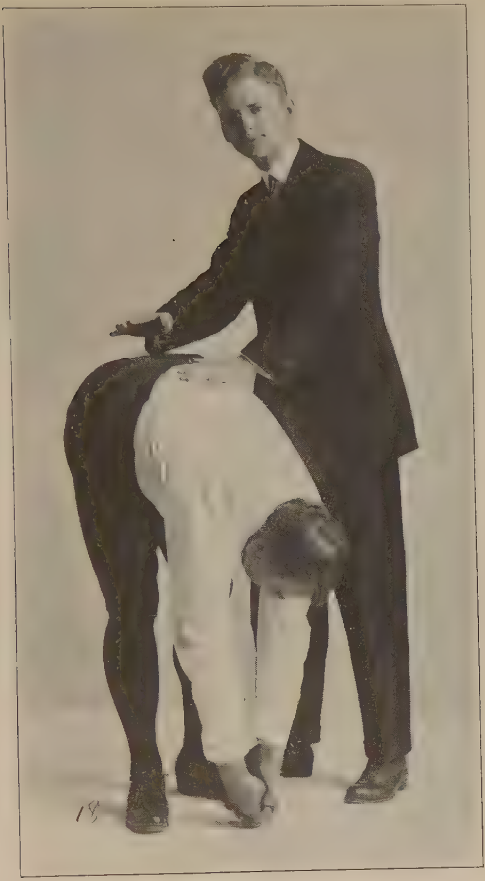
to the front at the waist line and without bending the knees try to touch the floor with the hands, vibrating up and down as you near the floor. Rising, bend as far backward as possible; repeat the exercise five times. Assume original position. Inhale and exhale five deep breaths. With arms in original position, bend as far to the right as possible, then as far to the left as possible, repeating the exercise five times. These exercises must be taken in moderation to begin with and increased with practice until they become both vigorous and strenuous. Exhale all the air from the lungs as you bend forward, and inhale to the fullest capacity as you bend backward. This is one of the best exercises known for flushing the stomach and intestines,

Cut No. 19—Author's First Experience Touching Hands to Floor

massaging the liver and kidneys, with pure blood filled with a generous supply of oxygen. It expels all the poisonous blood from the liver and kidneys, flushes the arteries and capillaries with fresh blood richly laden with oxygen, destroys the deadly disease germs, burns up the surplus fat in the liver and the cell life, and produces a general condition of health. Practice this exercise twice daily, using the same precautions as in No. 16.

Exercise No. 18 Continued from Page 151

cussion work over the back. Many will find their arms too short for their legs; perseverance will make the task easy. This massages the spinal column, stretches the ligaments, revitalizes the back, and stimulates all the muscles and nerve centers. The accompanying cut will show my first attempt at touching my hands to the floor in beginning my health culture work. Practice morning and evening.

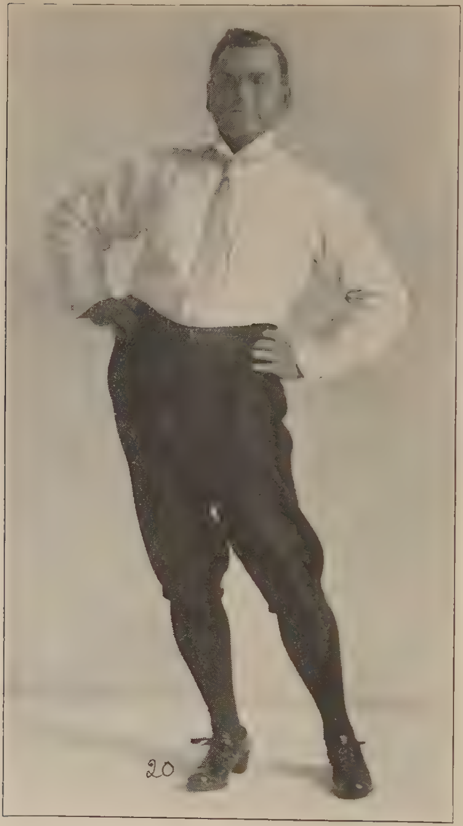


**Exercise No. 18**

## REVITALIZING SPINAL COLUMN

Exercise No. 18. Posture. Correct standing position. Feet flat on the floor, hips back, chest in line with the toes, head and shoulders up. Clasp hands high over the head, stretching to fullest capacity, bend at the waist line, swinging far to the right, then far to the left three times. Assume original position, maintaining knees stiff and legs straight, bend backward and forward until you are able to touch your hands to the floor in front of you. Have someone do light per-

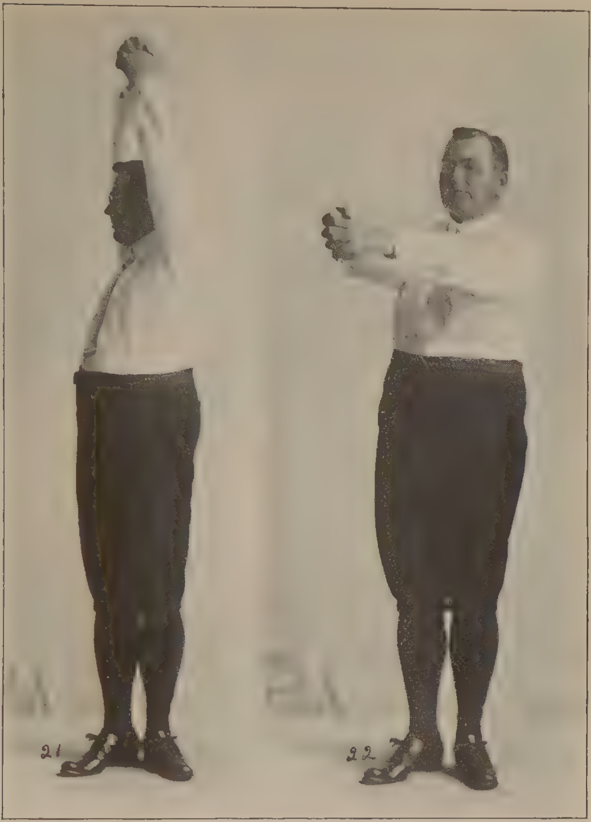
Continued on Page 150



**Cut No. 20**

## STIMULATING KIDNEYS, MASSAGING MUSCLES OF BACK

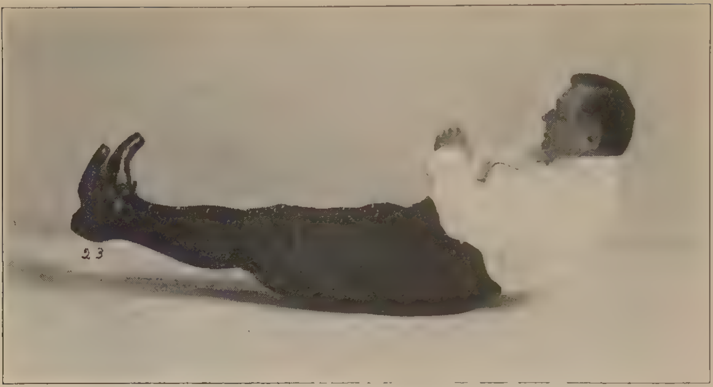
Exercise No. 20. Correct standing position. Arms akimbo, hands at waist line, feet flat on floor in front, head and feet stationary. Swing hips far out to the right, then far out to the left, repeat ten times. Use the rotary motion. Hips far to the right, then back, then left, then front, describing a circle with these movements. This massages the tendons, the nerves and the muscles of the back, flushes the kidneys, lubricates the joints of the back. It is a most valuable exercise in lumbago and rheumatism. It is also one of nature's greatest preventatives of these diseases. This should be taken daily.



**Cuts No. 21 and 22**

## THE LIVER TWISTER AND SQUEEZER

Exercise No. 21. Posture. Correct standing position. Arms clasped high over the head, stretch to the fullest capacity, maintaining feet flat on the floor, turn the body as far to the right as possible, then turn as far to the left as possible, repeating the exercise five times. Bring the arms straight in front, hands clasped, elbows stiff, swing as far to the right as possible, then as far to the left as possble. Repeat the exercise five times to begin with, increasing to ten. This squeezes the poisonous blood from the liver and kidneys, massages the stomach and the bowels and stimulates the nerve centers of the spinal column.



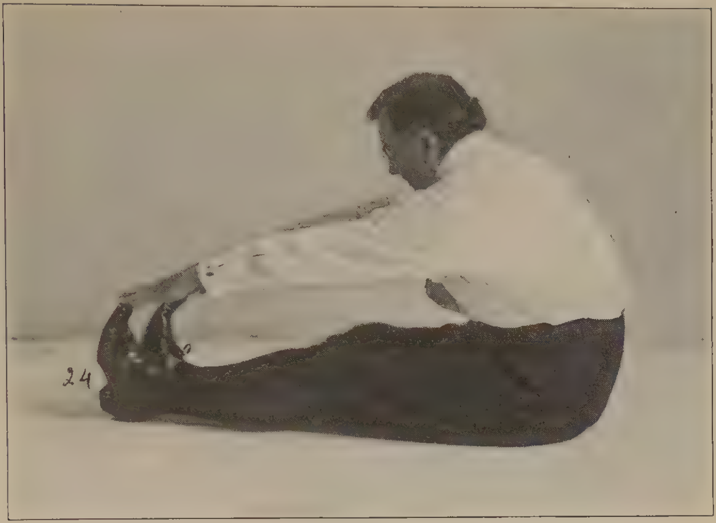
Cut No. 23

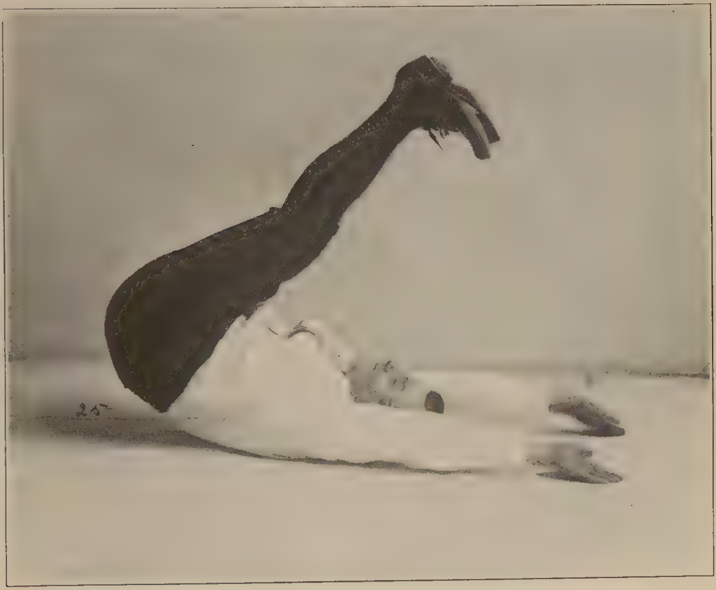
## FLOOR WORK FOR STOMACH, LIVER AND KIDNEYS

Exercise No. 23. Posture. Flat on the back, hands over head close together. Stretch the body to the utmost. Inhale and exhale three deep breaths and stretch once more. Swing up to half sitting posture, raise feet six inches from the floor, do heavy percussion work over the abdomen, striking first with open right hand, then with the left, repeating rapidly about 20 times. Rest on the back, and repeat the exercise. This stimulates the stomach and intestines, strengthens the abdominal muscles, and flushes the liver and kidneys. This exercise also relieves constipation and indigestion. It should form a part of our regular morning and evening exercise.

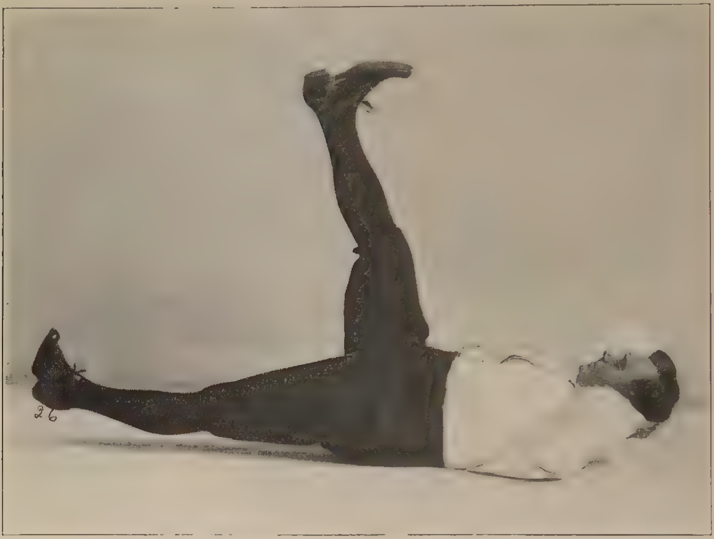
## HEAVY MASSAGE FOR LIVER, KIDNEYS AND STOMACH

Exercise No. 24. Posture. Flat on the back. Arms over the head as in previous position, stretch to fullest capacity, inhale and exhale three times, deep, abdominal breathing; stretch once more, swing up from the floor and touch the hands to the toes. With knees stiff let legs follow arms back to floor. If unable to reach the toes, have percussion work done over the back. Repeat the exercise five times at the beginning and increase to ten times in your regular morning and evening exercise. It is well to rest a moment on the back after five exercises, and do the percussion work over the stomach as in 23, then repeat the exercise five times. This furnishes a heavy massage for the liver, the kidneys and the stomach, aids digestion by stimulating the pancreas, duodenum and intestines. It is good for bladder troubles, and will relieve constipation.





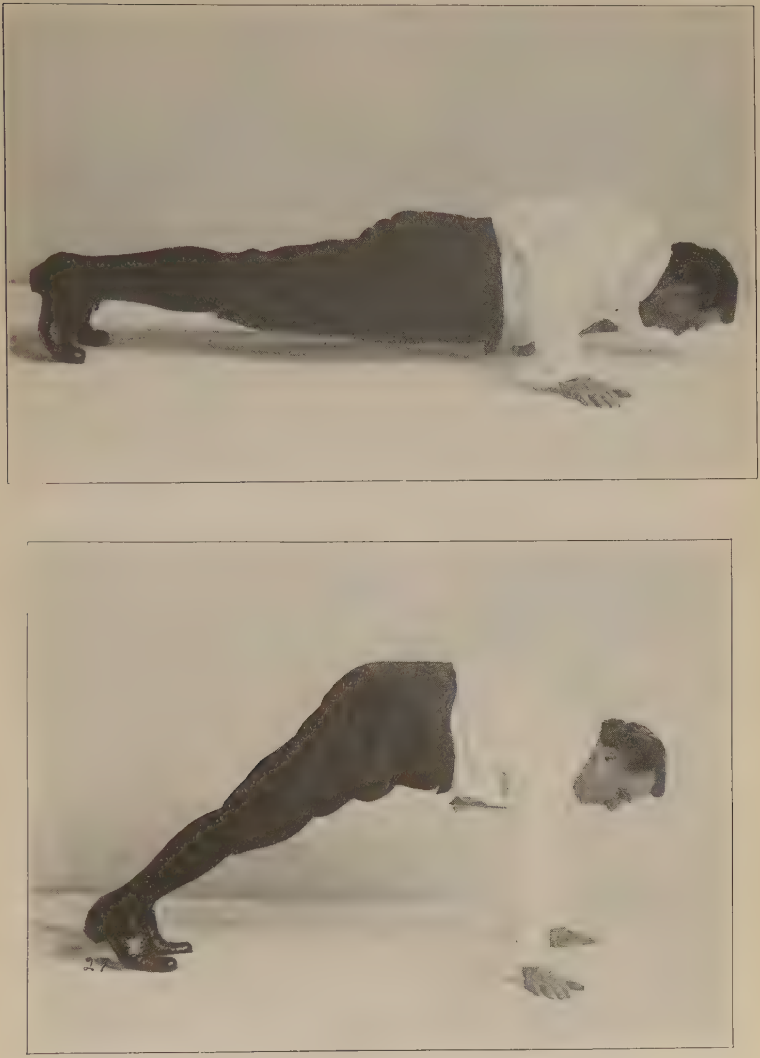
Cuts Nos. 24 and 25



Cut No. 26

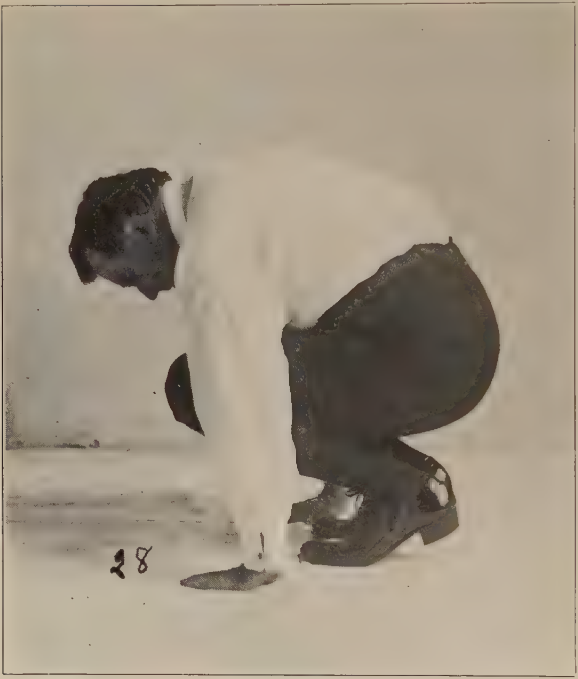
## STRENGTHENING ABDOMINAL WALLS, LOCAL ORGANS, KIDNEYS

Exercise No. 26. Posture. Flat on the back. Hands locked under head. Right foot elevated, leg straight and rigid; left foot six inches from the floor. Raise head slightly from the floor, lower the right leg and elevate the left, avoid touching heel to the floor. Repeat five times. Removing the hands from the head, repeat the exercise five times, doing percussion work over the abdomen. Rest a moment. Both feet one foot from the floor and close together, swing the legs wide apart and close them, repeating the exercise five times. This strengthens the local organs, aids digestion, strengthens the abdominal walls, stimulates the liver and kidneys. It relieves constipation and biliousness.



**Cut Nos. 27 and 27a**

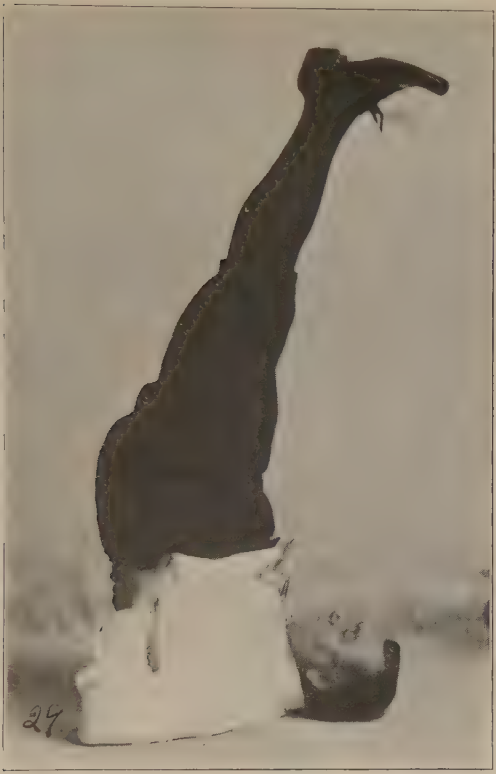
See Description on Page 160



Cut No. 28

## LOCAL TROUBLES, GALLSTONES, FLUSHING THE VISCERA

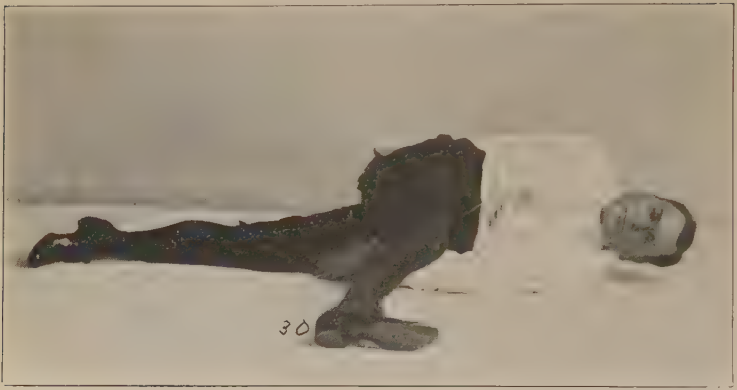
Exercise No. 28. Posture. Hands and feet on the floor, weight resting principally on the hands. Jump lightly, placing the feet between the hands, then spring back with feet in original position, repeating the exercise five times. Then with left leg extended and right foot near the right hand, spring lightly, exchanging positions of right and left leg, repeating the exercise five times. This aids in breaking up adhesions, stimulates the local organs, stretches the diaphragm, flushes the viscera and relieves constipation. This exercise should be taken three times per week. See 27a.



Cut No. 29

## REMOVING BLOOD PRESSURE FROM VISCERA, RELIEVING VITAL ORGANS

Exercise No. 29. Posture. Flat on back. Thrust the feet high into the air, resting on the shoulders, supporting back with hands, elbows on the floor. Elevate the feet, legs and lower body as perpendicular as possible. Drop the legs slowly over the head and elevate them again to the highest point possible. Repeat this three times to begin with, increase to five and then to ten if not too strenuous. At the close of the third time drop first the right, then the left knee near the breast, kicking up with each leg alternately, three times. This lifts the blood pressure from the lower viscera, stimulates the local organs, breaks up adhesions in the bowels, lifts the pressure from the vital organs and flushes the capillaries of the whole system. It relieves prolapsus and constipation.



**Cut No. 30**

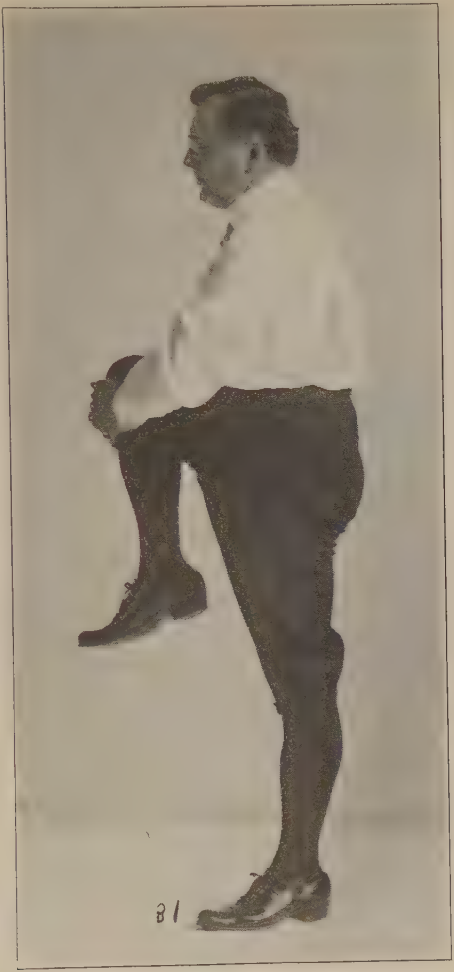
## MASSAGE FOR KIDNEYS, LIVER AND LOCAL ORGANS

Exercise No. 30. Posture: Arms at the side, body flat on the back. Throw the right leg far over the left leg, holding the right leg rigid and the knee stiff, reach as far toward the shoulder with the toe as it is possible to reach with the leg straight, turning slightly to the left side. Assume original position. Throw the left leg over the right in the same manner, repeating the exercise ten times. This massages the kidneys and bladder, stimulates the muscles of the hip and thigh, massages and flushes the local organs. Practice daily before retiring. This will reduce over-large hips and make them normal.

Exercise No. 57 Continued from Page 157

## STRENGTHENING ABDOMINAL MUSCLES, ALSO MUSCLES OF ARMS AND LEGS

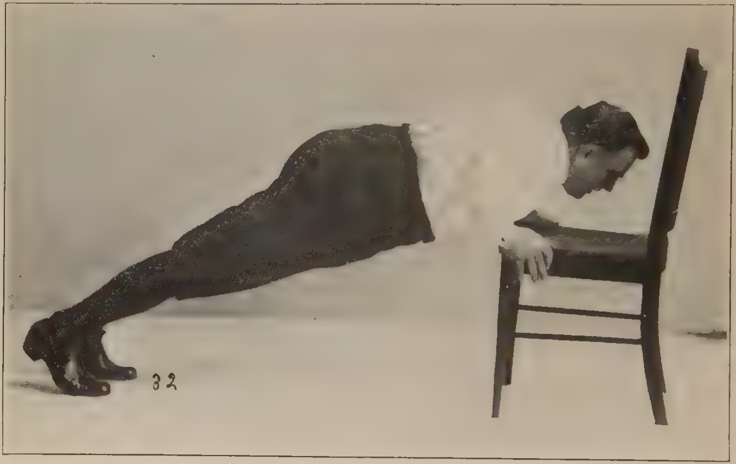
Exercise No. 27. Posture. Body flat, hands and feet on the floor. Lower the body on the arms and legs within four inches of the floor, raise the hips two feet from the floor and drop the body as before. Repeat the exercise five times to begin with and increase to ten later. This develops the grace muscle of the arms and legs. It strengthens the abdominal walls, and flushes the kidneys and liver, forces the blood into the involuntary nervous system, stimulating the nerves. It tones up the whole nervous and muscular system by forcing into service many unused nerves and muscles. This should be used about three times in the beginning, increased to five, then to ten, when the strain is not too great on the system.



**Cut No. 31**

STIMULATING LIVER, BLADDER AND INTESTINES

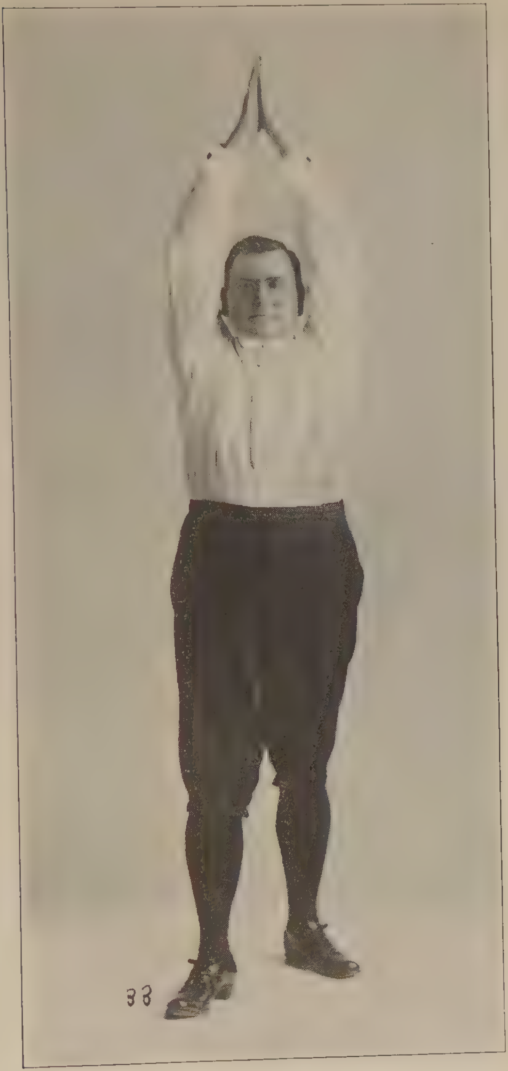
Exercise No. 31. Posture: Correct standing position. Right leg bent, hands clasped over the knee, draw the knee as close to the chest as possible, drawing it up and relaxing five times. Repeat the exercise five times with the left leg. This massages the liver and the intestines, stimulates the bladder and the local organs, stretches the ligaments over the hip and knee, also streches the sciatic nerve. This exercise should be practiced daily.



Cut No. 32

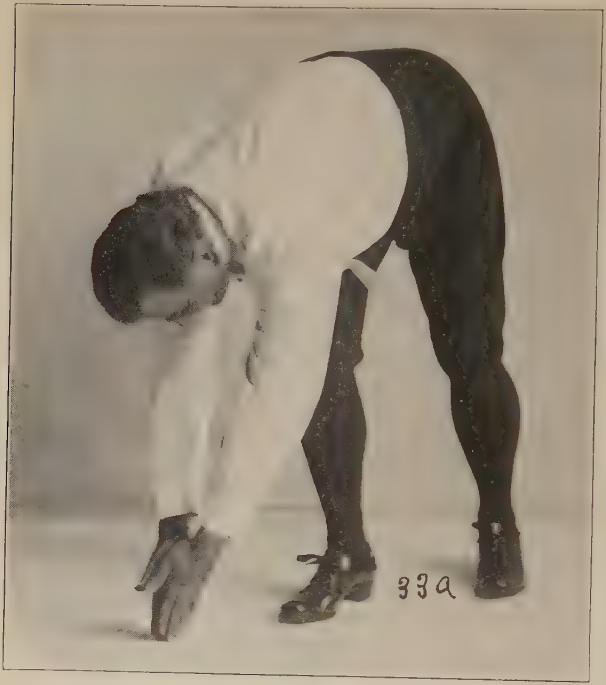
## CORRECTING CURVATURE AND ROUND SHOULDERS

Exercise No. 32. Posture: Stand in front of chair, hands on chair seat, feet 36 inches from the chair, body in straight oblique position. Raise and lower the body, forcing the shoulders back by dropping the weight of the body on the arms. Raise the body high at the hips and lower it to the original position five times. This corrects round shoulders and curvature, develops the triceps and intercostal muscles of the chest. Practice daily for curvature and round shoulders.



**Cut No. 33**

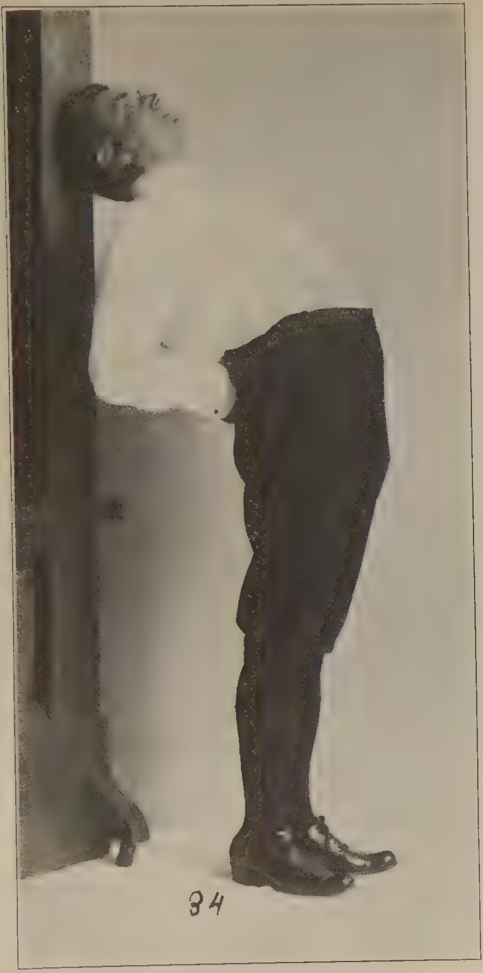
See Description on Following Page



**Cut No. 33a**

## STIMULATING MUSCLES AND NERVES OF SHOULDERS AND BACK

Exercise No. 33. Posture: Correct standing position. Drop the left foot back twenty inches. Stretch the arms high over head, palms together. Bend at the waist line to the right and touch the finger tips to the floor twelve inches to the right of the toe. Maintaining the arms straight and rigid, throw them up on a line with the shoulders. Exhale to the fullest capacity while bending forward. Inhale as the arms are extended and the body raised to original position. Change the position of the feet and repeat the exercise, bending to the left side in the same manner. Repeat the exercise ten times. This stimulates the muscles of the back, strengthens the involuntary nerve centers, flushes the vital organs, and builds up the shoulders.

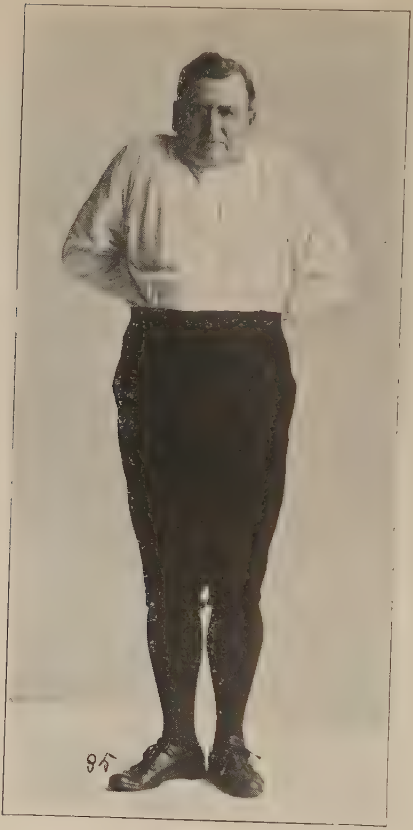


**Cut No. 34**

MUSCULAR DEVELOPMENT OF NECK, SHOULDERS AND BACK

Exercise No. 34. Posture: Stand two feet from the wall, lean backward with head against the wall, throw the weight against the head, lifting the shoulders and chest, shoulders thrust backward as far as possible. Raise and lower the body five times to begin with, and increase to ten or more when accustomed to the exercise. Inhale

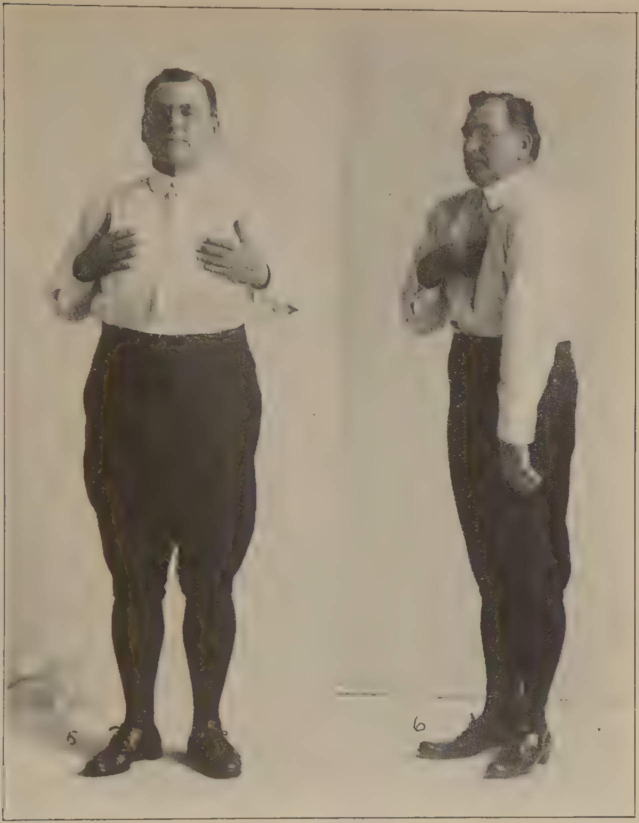
Continued on Page 171



Cut No. 35

## DEVELOPING AND BUILDING UP SHOULDERS

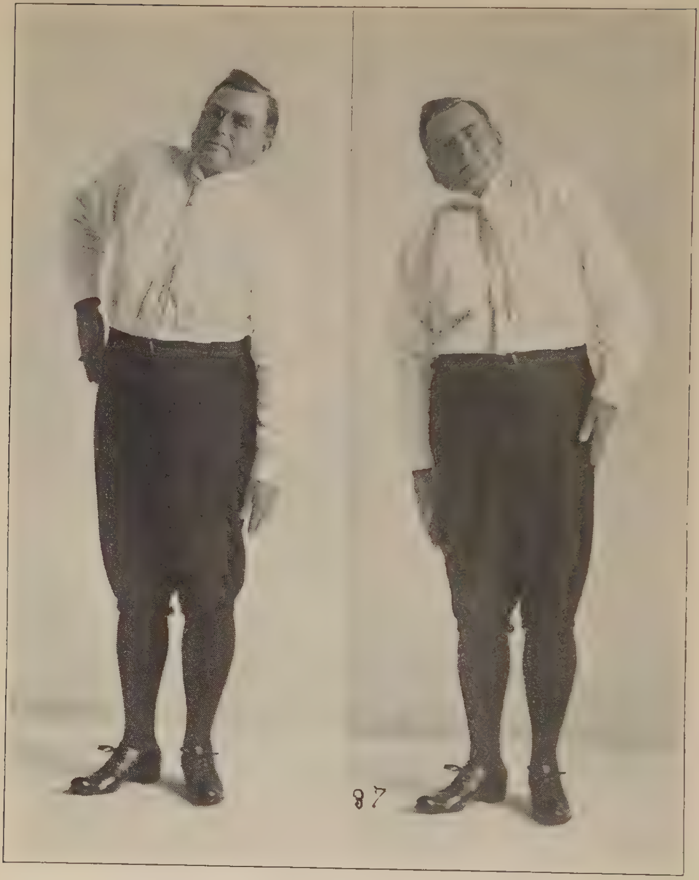
Exercise No. 35. Posture: Correct standing position. Hands behind the back, clasped together, chest well forward, shoulders back, maintain the chest even with the toes. Throw the chest out and the shoulders up as far as it is possible to throw them, inhaling to fullest capacity. Exhale as the shoulders are lowered. Repeat the exercise ten times, inhaling and exhaling slowly but to the fullest capacity. This exercise builds up the shoulders, increases the breathing capacity and prevents the shoulders from drooping. Practice daily.



**Cut No. 36**

## CORRECTING ROUND SHOULDERS AND CURVATURE

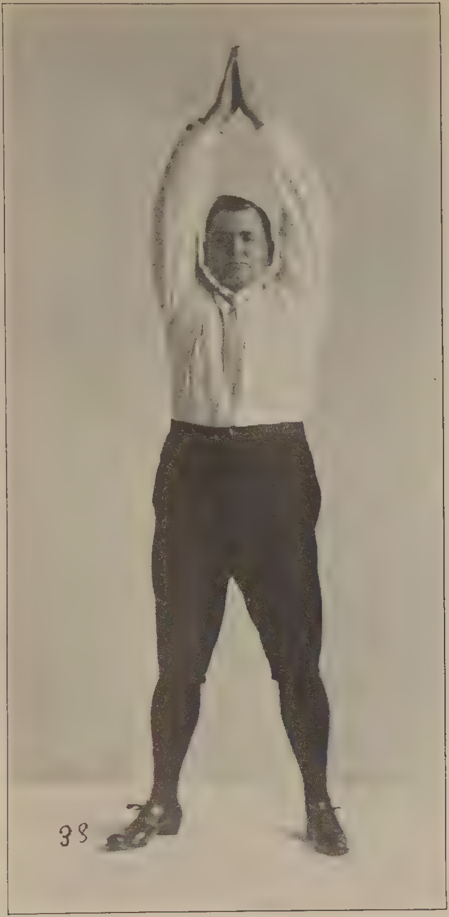
Exercise No. 36. Posture: Correct standing position. Throw the chest in and the shoulders forward as far as possible, exhaling all the breath. Throw the chest out and upward, and the shoulders upward and backward, inhaling to the fullest capacity, hold the full breath while you slowly count five, exhale very slowly, blowing the breath out lightly until you have forced out all the air possible from the lungs. Repeat the exercise ten times. These exercises expand the chest walls, build up the shoulders, correct upper curvature of the spine, and develop the breathing capacity. Practice morning and evening, also in the open air.



**Cut No. 37**

### CORRECTING DROOPING SHOULDERS

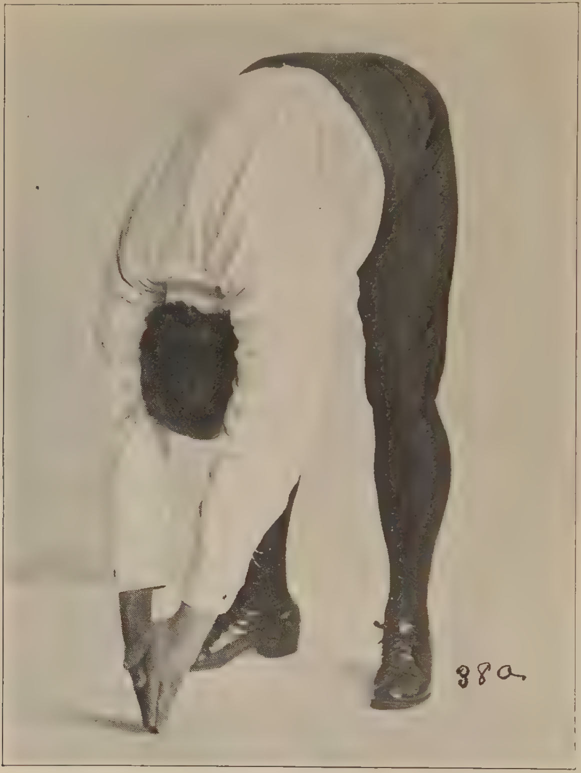
Exercise No. 37. Posture: Correct standing position. Arms at the side. Maintain body erect and chest forward, throw the right shoulder up as high as possible, inhaling as you raise it, dropping the left. Reverse the position, throwing the left shoulder up and the right down, exhaling as fully as possible. Repeat the exercise ten times. This strengthens and develops the deltoid muscle, lifts the drooping shoulder, and stimulates the nerves in the upper shoulder and back. Practice daily.



**Cut No. 38**

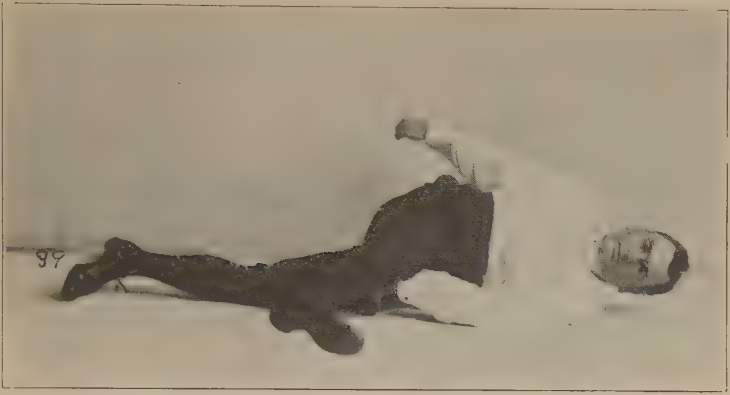
## STRETCHING DIAPHRAGM. DEVELOPING LUNGS. MASSAGING VITAL ORGANS

Exercise No. 38. Posture: Correct standing position. Feet 24 inches apart, hands high over head, palms together. Bend at the waist line, maintaining head in same position between the arms, touch the finger tips to the floor, exhaling as you bend over. Assume orig-



**Cut No. 38a**

inal position, bend backward as far as possible, inhaling as you rise. Repeat the exercise, touching the finger tips to the right as far as possible, then to the left as far as possible, always maintaining the same position of the head between the arms. Exhale to fullest capacity in bending forward, and inhale to fullest capacity on rising. Repeat the exercise five times for each position. Three will be sufficient to begin with and increase with practice. Maintain the knees stiff. Have percussion work over the back when bending forward. This stretches the diaphragm, stimulates the stomach, intestines, liver, kidneys, heart and lungs. It removes surplus fat from the abdomen and from around the heart.



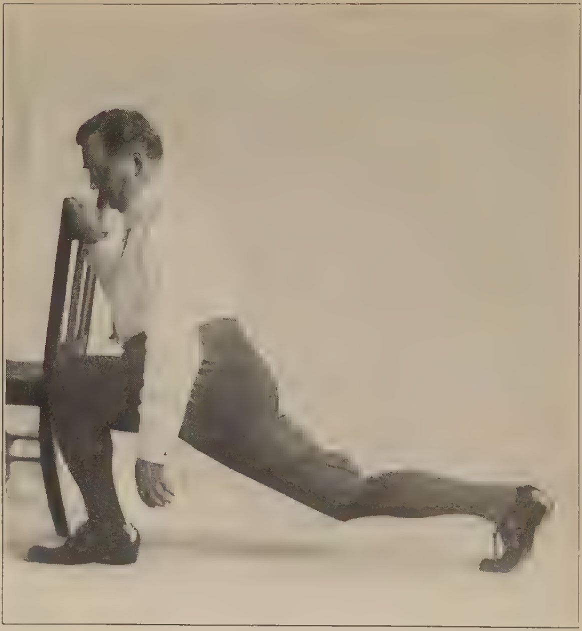
Cut No. 39

MASSAGING VITAL ORGANS. STIMULATING NERVE CENTERS

Exercise No. 39. Posture: Lying flat on the side, left arm extended in line with body. Right arm straight and rigid, extended slightly backward, right leg straight and rigid, extended slightly forward. Thrust the right arm backward, and the right leg forward to the fullest capacity and with vigor. Reverse, swinging the right arm forward and the right leg backward, repeating the full exercise five times. Reclining on the right side, repeat the same exercise with the left arm and leg five times, increase to ten times with practice. This massages the vital organs, stimulates the nerve centers in the stomach and along the spinal column. It increases the circulation and removes surplus fat from all vital organs.

Exercise No. 34 Continued from Page 165

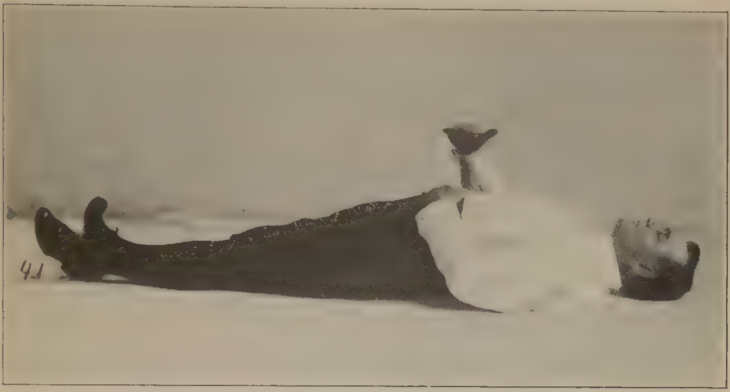
to the fullest capacity as you raise the chest and exhale as you lower. This develops the muscles of the shoulders and neck, corrects round shoulders and upper curvature of the spine. Practice twice daily when desiring to correct these defects.



Cut No. 40

## CONSTIPATION, NERVOUSNESS, INDIGESTION

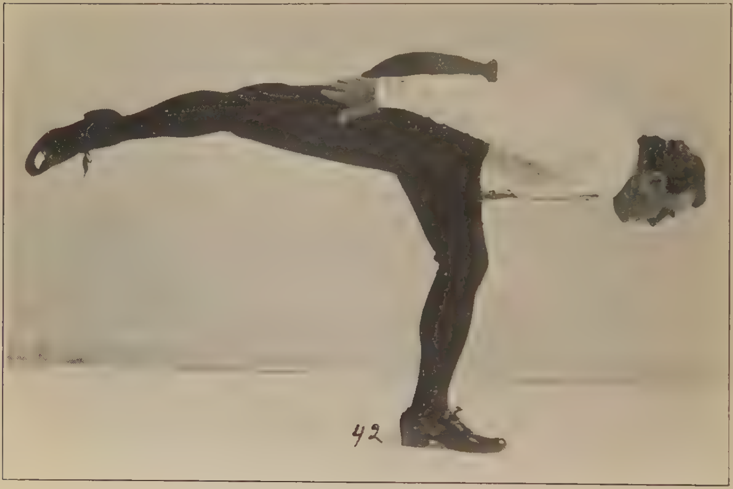
Exercise No. 40. Posture: Correct standing position. Right arm extended straight in front, on chair. Step the right leg backward far as possible, bending the left leg to a right angle at the knee, touching the right knee to the floor. Place the right leg forward as far as possible, bending it to a right angle at the knee, touching the left knee to the floor. Stretch the right leg as far as possible to the right, bending it to a right angle at the knee, touching the left knee to the floor. Stretch the right leg across the left as far as possible, bending both knees, squatting to the floor. Repeat five times to begin with, increasing to ten with practice. These exercises relieve constipation, nervousness, indigestion. They stimulate the nerve centers of the body and increase capillary circulation. They develop the grace muscles of the legs and reduce the surplus fat of the body. Practice daily, beginning with special care.



**Cut No. 41**

## DEVELOPING ABDOMINAL MUSCLES BY TENSING AND PERCUSSION

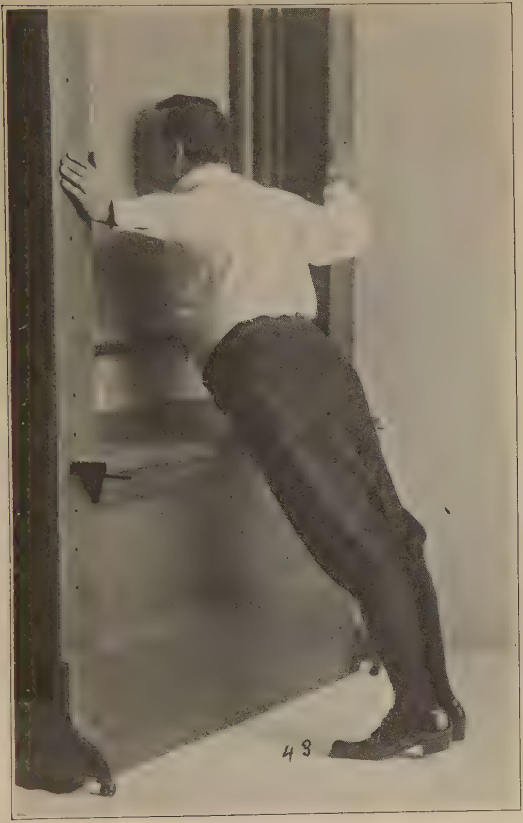
Exercise No. 41. Posture: Lying flat on the back. Hands across the abdomen, tense the abdomen, flushing, at the same time forcing the abdomen upward, giving the percussion work rapidly with the open hands, striking alternately ten times with each hand. Raise the head and feet six inches from the floor, tense the abdomen and flush again, maintaining the legs stiff and rigid, repeat the percussion work. Rest a moment on the back and repeat the exercise three times to begin with, increasing to ten with practice. This strengthens and stretches the diaphragm, invigorates the muscles supporting the abdomen, flushes all the vital organs, increases the circulation and relieves constipation. It reduces surplus fat from the abdomen.



**Cut No. 42**

## BALANCING EXERCISE

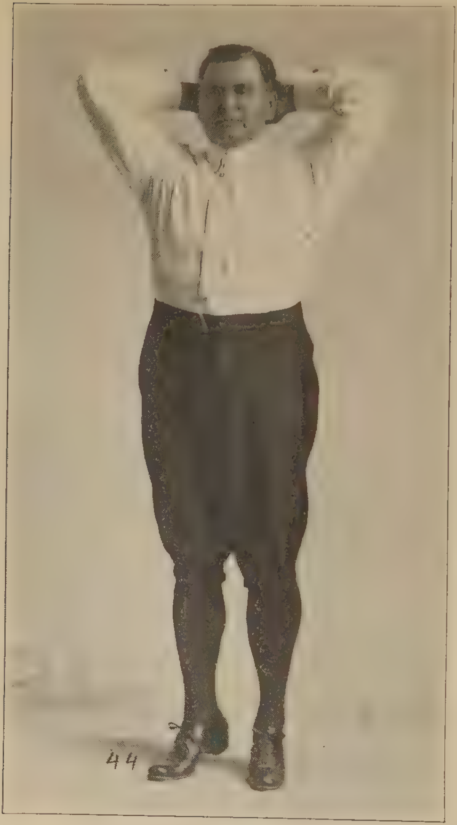
Exercise No. 42. Posture: First correct standing position. Maintaining the body in a straight line, bend over the left knee with the body horizontal as in the cut, hold the body in this position for a few seconds, with nerves and muscles tense. This tenses the muscles, stimulates the nerves and strengthens the abdominal muscles. Repeat the exercise by bending over the right knee.



Cut No. 43

## DEVELOPING THE CHEST, STRENGTHENING ABDOMINAL MUSCLES

Exercise No. 43. Posture: Correct standing position. Place hands on the door casings standing about two feet from the door. Bending the arms at the elbow, press the chest forward as far as possible, repeating the exercise ten times, and increasing with practice. This will develop the chest walls, correct round shoulders and upper curvature, strengthen the abdominal muscles and increase the vital lung capacity. It aids in reducing the surplus fat of the abdomen. Practice twice daily.



Cut No. 44

## STRENGTHENING ABDOMINAL MUSCLES

Exercise No. 44. Posture: Correct standing position. Place the clasped hands at the back of the head, throw the hips well back and the chest up and out, stand on the tip toes and stretch the body to the fullest capacity, drawing the abdomen upward as far as possible. Maintaining this position, walk around the room on your tip toes until fatigued. Repeat this exercise twice daily for reduction of superfluous fat, especially in the region of the abdomen. This strengthens the abdominal muscles. Gives control over them for the support of the abdomen. It also causes the stimulation of the nerve centers of the back. Continue to stretch the whole body upward as much as possible while walking on the tip toes.

# FOOD AND FOOD VALUES

*"Man's rich with little were his judgment true;*
*Nature is frugal and her wants are few.*
*These few wants, answered, bring sincere delights;*
*But fools create themselves new appetites."*
—EDWARD YOUNG.

The food or fuel supply of the body is the prime element of man's physical life. Man's intellectual, moral and religious nature is so interdependent on the condition of the physical man, that we might almost say that food is the prime element of human life. A poor selection, or abnormal quantity of food produces a torpid liver. A torpid liver produces a morbid mind. A morbid mind produces base and immoral thoughts. Base and immoral thoughts sound the death knell of all religious impulses. An acid temper is usually the product of an acid and dyspeptic stomach. The question, "Is life worth living," depends very largely on what, and how, and how much you eat. Some one in answering this question, "Is life worth living," said: "It depends on the liver." This is true in a double sense.

The foods of the body in general necessary to generate heat and energy sufficient to maintain natural and normal vigor, are oxygen, water and food. These are mentioned in their order of vital importance. Man can live weeks without food, days without water, but only moments without oxygen. In speaking of foods in general we usually eliminate from our thoughts oxygen and water, which are the prime essentials. The prime chemical elements of food are oxygen, hydrogen, nitrogen and carbon. All these must enter into our food or fuel supply. Oxygen is the breath of life. It purifies the blood and burns the fuels in the body to generate heat and energy. Hydrogen is supplied principally through the water we drink, and that found in a large percentage in all food, as well as in our starches, sugars and fats. It furnishes the liquid food of the body. A very large percentage of the body is made up of water. Carbon generates the heat and energy for the activities of the body. This is the chief ingredient in coal and all fuel. The carbon for the body is not furnished by coal dust, but through fats, butter and oils. These are the chief source of heat for our bodies aside from the carbohydrates which furnish the quick heat, or as some have termed them, the kindling for the fuel of our bodies. The colder the climate the greater the demand of the body for fats and oils. In the Arctic region the diet is almost all fats.

### CARBOHYDRATES

The carbohydrates consist of the sugars and starches. These furnish the fuel for the ordinary energies of the body. They might be called the working capital of the body. The use of animal carbon predominates in the body's fuel for heat, while the vegetable carbon predominates in its fuel for energy. The carbohydrates burn in the body only the carbon, and furnish a quick heat for muscular energy. It is the fuel for light work. The animal carbon, the cream, the butter, the fats and the oils, produce intense heat, by burning both the carbon and the hydrogen. These can be used in large quantities only when great heat and a large amount of energy is demanded.

### NITROGEN

Nitrogen is one of the chief elements in the composition and maintenance of bodily life. It furnishes the material for the repair and reconstruction of the broken down cells, and for the rebuilding of the broken down tissues of the body. Nitrogen is found in all animal foods, in beans, peas, cheese and nuts. This is the food for the repair of the body wastes, and must be used in some form by all classes.

## FOOD SUPPLY OF THE BODY

Food has been classified as wholesome or poisonous. Wholesome food becomes poisonous with decomposition, or when taken in abnormal quantities. It must then decompose in the intestines. Some poisonous foods may be used in small quantities without serious injury. Their persistent use is a bar to good health. Poisonous foods are not alike poisonous to all individuals. Potato and egg are among our most wholesome food, yet to some they are rank poison. "One man's meat, may be another man's poison."

## FUNCTIONS OF THE FOOD SUPPLY

The functions of the food supply of the body are as follows:

1. To maintain growth and repair the bodily waste.
2. To maintain the temperature, or preserve the natural heat of the body.
3. To repair, rebuild and create new cells for the blood, tissues, nerves, muscles, bone and brain of the body.
4. To generate energy to maintain all the bodily functions, and to provide for physical and mental activities of the body.

## CLASSIFICATION OF FOODS

Foods are divided into proteins, carbohydrates, fats, mineral salts, water and oxygen. The last two are seldom classed as foods. They are essentials.

*Proteins.* The proteins are the body building, tissue repairing, and muscle building foods of the body. All cell life must be created, repaired and restored by protein. The protein foods are the meats, beans, peas, nuts, cheese, casein of milk, fish, and eggs.

*Carbohydrates.* The carbohydrates are the heat and energy producing foods. They are found in the fruits, the cereals and the vegetables. These are sometimes called the kindling wood of the fuel supply.

*Fats.* Fats are the intense heat and energy producers of the body. The principal food supply in fats is found in meat fats, butter, cream, oils, some of the cereals, and some nuts are rich in fats. Oats have the largest percentage of fats of any of the cereals. Pecans and Brazil nuts are richest in fats. Fats must be used sparingly, as the system can handle but a limited supply at one time.

*Mineral Salts.* The mineral salts are the bone builders of the body. They supply the body with iron and other minerals and are great aids to the digestion of other foods. Our chief source of mineral salts is found in lettuce, celery, onions, radishes, raw apples, raw tomatoes, raw cabbage, and some in raw fruits aside from apples. Mineral salts is one of the great essentials of the food supply. It is food for both blood and nerves as well as for the brain.

*Water and Oxygen.* These two elements are among the most important elements in our food supply. They are treated extensively elsewhere, so will be passed over at the present time.

These classifications of foods will be handled in a number of places on account of their great importance. Also that the reader may become thoroughly familiar with them. We must know the classification of foods and the value and purpose of each class, or it will be impossible for us to study foods intelligently.

*"Not many lives, but only one, have we—frail fleeting man;*
*How sacred should that one life be—that narrow span,*
*Day after day filled up with blessed toil,*
*Hour after hour still bringing in new spoil."*

—H. Bonar.

## MEDICINAL FOODS

*"The first physicians by debauch were made;*
*Excess began and sloth sustains the trade.*
*By chase our long-lived fathers earned their food;*
*Toil strung the nerves and purified the blood;*
*But we their sons, a pampered race of men,*
*Are dwindled down to three score years and ten.*
*Better to hunt in fields for health unbought*
*Than fee the doctor for a nauseous draught.*
*The wise for care on exercise depend;*
*God never made his work for man to mend."*

—JOHN DRYDEN.

Certain foods are known as medicinal foods. These foods are not considered as a panacea for all the ills of life, neither are they supposed to take the place of all medicine for the cure of diseases of the body, especially when it has received its customary abuse and neglect. In such cases it is well to consult your physician. The purpose of medicinal foods is to furnish the body with proper chemical elements to meet certain conditions.

### LAXATIVE FOODS

The body may need laxative foods. It will find this in rhubarb, spinach, onions, prunes, figs, peaches and apples. Potatoes, beans and pears also have a laxative tendency. Foods causing constipation are to be found in meats, hot milk, hot bread, cheese, blackberries, raspberries, cooked cereals and honey, most highly seasoned foods tends to constipation and should be avoided from a health standpoint.

*Neutral foods* are to be found in eggs, dry or buttered toast, milk, nuts, cold bread, white, graham or whole wheat, lettuce, celery, radishes, oranges, string beans, and raw cabbage. Apples with most persons are neutral, while with some they are laxative.

Certain foods are valuable when certain chemical elements are desired. Iron is found in peaches, carrots, berries, beans, spinach, celery, radishes and raw cabbage. The system needs iron. It is much more wholesome to get it from these natural food sources, than from licking a lamp post or sucking a bottle. The anaemic should use the foods rich in iron.

*Sulphur* is found in cauliflower, turnips, raw cabbage, water cress and onions. These foods containing iron and sulphur furnish the best blood purifier and tonic for the system. Certain foods are said to furnish a clear complexion, among these are raw tomatoes, apples, lemons (no sugar), carrots, and raw onions. The tomato is one of the best stimulants known for the liver. They are better used raw with no vinegar. Use lemon if an acid is desired with them. Onions absorb poison and dissolve uric acid. Lemon juice turns to an alkali in the blood and dissolves uric acid. It is also a great germicide. Apples furnish mineral salts and aid in the dissolution of uric acid. Carrots are rich in iron, they increase the red blood corpuscles, furnish a tonic for the system and clear and beautify the complexion.

Certain foods are highly recommended in case of certain diseases. A splendid diet for constipation is furnished in dry or buttered toast, baked potatoes, spinach, celery, rhubarb unsweetened, apples, raw cabbage, no vinegar, raw tomatoes, soft boiled eggs, one and one-half minute, raw onions, figs and prunes. Use in addition to this diet the exercises for the stomach, the intestines, the kidneys and the liver. Any case of constipation may be cured by this diet and exercise. The above list of foods is not a menu for a meal. It is a list of foods from which a light meal may be selected.

### RHEUMATISM

Rheumatism can be cured only by diet, exercise and hot baths. The exercise and bathing is almost as efficient as the diet in this disease. Hot baths should be used at least twice per day. The cabinet baths are valuable, as heat is the great enemy of rheumatism. The bath should be finished with a cold towel bath to close the pores of the skin. The room should be warm in which these baths are taken. The bath should not last longer than twenty minutes. This preliminary care of the body is absolutely essential in rheumatism, before the individual can hope to receive special benefit from diet. The lack of the proper observance of dietary principles has been the primary cause of rheumatism. These precautions must be taken to correct this error in diet, then the individual may follow with profit the rules of diet for rheumatism, and a cure is well nigh assured.

In dieting for rheumatism, the food must be reduced to the minimum. Meat, vinegar, all acid fruits, except citrus fruits, must be entirely eliminated from the diet. Select a very small amount of food for your meal from the following foods: Eggs, very soft boiled or poached; onions, green, raw, or boiled in milk; celery, raw, cooked or made into soup; lettuce, raw; cabbage, raw; tomato with lemon juice; turnips, baked potato, dry or buttered toast, carrots, sweet apples, peaches, prunes or figs, melons, sweet grapes, green corn in small quantities and sweet milk. Sugars and starches must be avoided. The amount of food eaten must be very small. Selections may be made from the above foods, so that a very attractive and wholesome menu may be secured.

### SWEETS

The body requires at all times a certain amount of sweets, unless because of disease it has become necessary to eliminate them from our diet. Sugars are not the most wholesome form in which we may obtain our sweets. It is much better, especially for children, to secure the larger portion of our sweets from nature's storehouse—the fruits. Sweets in abundance will be found in the raisin, the prune, the fig, the date and sweet oranges. Certain varieties of the pear, the peach, the apple and plum. These fruits, together with certain varieties of melons, not only furnish the sweets necessary for the body without overworking the liver in the chemical transformation of sugar, but they also furnish the body with mineral salts, and serve as a laxative for the bowels, and as a tonic and purifier for the blood. Green and over-ripe fruits must be avoided. A fruit and vegetable diet has many points of vantage over a heavy meat diet. The scientists declare the meat eater's heart must beat more than 1500 additional strokes daily because of the meat diet. There are certain poisonous elements in meat that must be eliminated from the system. One of the most harmful of these is uric acid. Heart disease, cancer and Bright's disease are more prevalent.

# FOODS AND THEIR VALUE IN NUTRITION

*"Blest be those feasts, with simple plenty crowned,*
*Where all the ruddy family around*
*Laugh at the jests or pranks that never fail,*
*Or sigh with pity at some mournful tale."*
—GOLDSMITH, *"The Traveler."*

The selection of food for the nutrition of the body has become one of the great problems of civilized man. The human body is the most delicate and complex organization of God's creation. No mechanism of inventive genius approaches the marvel of the human body. The delicate and complex machinery of inventive genius is cared for by the keenest experts of the mechanical world. Corporations pay fabulous prices for the services of men who understand the delicate and complex nature of the machinery that must perform their work. The delicate, complex organism of the human body and brain is often entrusted to amateurs. It is often the victim of gross ignorance, base neglect, and criminal abuse, both as to its care, and as to its food supply.

ELEMENTS COMPOSING THE BODY

| | |
|---|---|
| Water | 60 per cent |
| Protein | 18 per cent |
| Fats | 15 per cent |
| Mineral Ash | 6 per cent |
| Carbohydrates | 1 per cent |

The food supply of the body is also made up of the above elements, each with its own peculiar function in body building and fuel supply. The body demands certain elements of food for body building and for the repair of the broken down cells and tissues. This demand is practically the same in all classes of individuals, regardless of their vocation in life. It requires practically the same amount of food for body building and for the repairing of the waste and broken down cells and tissues, in the professional man, as it does in the coal heaver. The only class of food that can repair these broken down cells and rebuild the waste tissues, is protein. The study of foods and their value in nutrition is a many sided question. It must be viewed from many angles and measured from many segments. The real fuel value of food in nutrition is the building of tissue, and the yielding of energy for warmth and work. The wasted and broken down cells must be repaired, and new cells must be generated to supplant the retired cells. In the blood alone this requires 700,000,000 new cells daily.

### REBUILDING CELL LIFE

The cell life of the body thus being constantly destroyed and broken down must be constantly renewed and built up. Man lives or dies in the cell life. If the cell life is wasting away more rapidly than it is being repaired and built up, man is on the down grade and wreck and ruin stares him in the face. The study of food and food values in nutrition is calculated to aid in the proper selection of food, as well as to teach us how to regulate the amount of fuel necessary to furnish the proper amount of heat and energy to supply the needs of the body so that we may meet the demands, without impairing the machinery given us for digestion, assimilation, and nutrition.

The purpose of this article is not to furnish information in technical language for the scientist and the food expert, but to take the principles familiar to them, and present them in simple form so that the child and the work-a-day man may be able to comprehend, and put into practice the principles that have been accepted by the leading scientists and food specialists of the world today.

Selecting foods, cooking foods, and serving foods, all are of prime importance. Not so much what we eat, as what we digest and assimilate is the measure of life and health and happiness. The body is made up very largely of the same elements as the food that we eat to sustain it.

### REPAIRING CELL LIFE

The human body differs from all other machines in that it is self-repairing. It is an auto-repair machine. We have said man lives or dies in the cell life. These cells that are constantly being broken down by the natural waste of the human system, are as constantly being repaired and built up by the energy supplied by the fuel of the body, so that the waste is not perceptible until man reaches mature age unless he has neglected and abused his body. Then the collapse often comes suddenly and without warning. This natural waste, even with age, would be far less perceptible if man paid as much attention to the needs and requirements of the body, as the engineer does to the needs and requirements of his engine.

### NEGLECT OF THE BODY A CRIME

Our neglect of the body is the shame and the crime of the twentieth century. We shovel in the fuel regardless of the amount we can digest and assimilate, and allow the surplus matter to decompose and decay in our systems until we are not only auto-intoxicated, but actually poisoned by the surplus amount of food that we have forced our bodies to handle, then we wonder why we do not feel better, and why we do not live longer, and why our talents are not more highly appreciated by those with whom we come in contact. The trouble is we are drunken by the alcohol brewed in our own stomach and intestines from the decomposed food which we have forced to rot there because of the abnormal supply which we have forced upon the system. We do not sober up often enough to recognize the fact. Man must have a well balanced ration to repair the waste and broken down cells of the body, and to generate the new cells necessary to supplant the retired ones, and to generate heat and energy necessary for the demands of the body. Armies and governments have spent millions of dollars that they may ascertain what is a well balanced daily ration for the soldier, so that he may be able to slay his antagonist when he meets him on the field of battle, and so that he may sustain his strength for the fray, as he goes on the forced march to meet him. Our government should be equally interested in furnishing the information that will enable her citizens to obtain a well balanced ration, for the preservation of health in the ordinary walks of life. Governments are studying this problem today as never before. Men of science are devoting their lives to this problem. Skilled physicians are giving their energies, their scholarship, and their lives that they may better the conditions of human life. Colleges and universities are devoting millions to the study of the food problem of the masses, and the betterment of the physical condition of the students.

### ANALYSIS OF FOODS

The scientists have not only furnished us an analysis of our food supply, separating it into the component parts, but they have given us the food value of each component part of our food supply, and its function and fuel value in heat and energy. So perfect is this analysis that we can get the fuel value of every article of food and know just how much heat and energy each ounce of food will generate.

### CHEMICAL COMPOSITION OF FOOD

The principal chemical elements of the body and the food that must sustain the body are oxygen, hydrogen, carbon, nitrogen, calcium, phosphorus, and sulphur. These basic elements of our food supply through chemical combinations produce many compounds in our food supply. We shall deal only with the most important of these compounds in our studies of food.

The principal compounds of our food supply as analyzed by the scientists are protein, carbohydrates, fats, mineral salts, oxygen and water.

*Proteins* are the real body builders. They build the super-structure and repair the waste and broken down cells of tissue, nerve, muscle, bone, and brain, and generate the new cells necessary to do the work of the 700,000,000 blood cells that die daily, and the countless millions of other cells of the body, whose life span is less than a single day. The principal foods rich in protein are the meats, peas, beans, cheese, eggs, gluten of wheat, fish, and nuts.

*Carbohydrates.* The carbohydrates are composed of carbon, hydrogen, and oxygen. They are a very important element in nutrition as they yield an abundance of energy in a short space of time. For this reason they have been called the kindling wood of the fuel supply of the body. The carbohydrates form man's greatest field for food. The body demands about five times as much carbohydrates as protein. The principal carbohydrates are found in the cereals, the vegetables, the fruits, the sugars, honey, and syrups. These foods furnish the heat and energy necessarily demanded by our bodies to accomplish their work.

*Fats.* The fats also furnish a large amount of heat and energy for the body. They furnish a more intense heat and generate a greater power than the carbohydrates. The stomach rebels against their use in large quantities except in very cold climates, and under very heavy and strenuous labor. In the Arctics the inhabitants almost live on fats in order that they may produce that intense heat of the body to battle against the bitter cold. Surplus fats can be stored in the body and become available at a future time when there is a shortage in the food supply. This produces corpulency and endangers the vital organs. Foods especially rich in fats are the fats of meats, butter, oils, cream, certain nuts, and a few cereals. These must be eaten sparingly.

*Mineral Salts.* The mineral salts hold an important place in our food supply. With the masses this portion of our food supply has been sadly neglected. The mineral salts furnish the alkalies necessary to purify the blood. They also aid in digestion and in building and repairing the broken down bone cells. The raw foods rich in mineral salts are the lettuce, celery, onions, raw cabbage, radishes, apples, and many other raw fruits, and raw tomatoes. These furnish much of the iron necessary for the blood and the demands of the whole body.

*Oxygen and Water.* These are two of our most important articles in our food supply, yet many never mention them in our list of foods. Oxygen is life. Man can live weeks without food, days without water, but only moments without oxygen. Perfect digestion and assimilation of food is impossible without an adequate supply of oxygen. More people are starving to death because of a lack of oxygen than because of a lack of food. Individuals are trying to live on a tidal breath of 50 cubic inches of air, when they should have from 100 to 150 cubic inches of air with each inhalation. Many are living with only two inches of chest expansion, when no individual can be healthy with less than 5½ inches in chest expansion. Many have a lung capacity of from 100 to 150 cubic inches of air, when they should have from 250 to 350 cubic inches of lung capacity. As a people we are famishing for oxygen, because we are too lazy to breathe. This is the chief source of the awful wreck and ruin wrought by the ''Great White Plague.'' Man must feed on oxygen or die. Step out into ''God's great out-of-doors'' and breathe in Nature's pure elixir of life. Free as the sunshine, more precious than gold, rubies or diamonds.

The greatest emphasis that I wish to lay upon water is that it be pure. It is an important element in our food supply, but when taken for the best health results, should be taken separately from our food. Eat your meals without drinking when you are eating for health. Our water supply is very largely the source of our health, or our disease. The sacred Ganges is a veritable propaganda for cholera germs. The natives bathe in the river, drink her supposed sacred water, return to their homes and are stricken with death infection from the polluted waters.

Typhoid often lurks in our wells, our streams, and often in our city reservoirs, carrying death and disaster instead of health and life. If you question the purity of your water supply never drink it without boiling. Pour it from vessel to vessel to furnish a new supply of oxygen.

## PROTEIN

Protein as a body builder needs a careful consideration. If protein is furnished in insufficient quantities, then the body wastes away; if it is furnished too lavishly, it burns up the energies of our vital organs in trying to eliminate the surplus. Some have compared the protein and the carbohydrates in their work in the body, to the locomotive. The protein furnishes the steel for the repair of the locomotive, while the carbohydrates furnish the fuel to generate the heat and energy necessary to produce the steam and power. The ordinary man eats from two to three times the amount of protein demanded by the body. Protein must be eliminated by the kidneys. They are overworked by this surplus and being the shortest lived organs of the body, this overdraft is very serious. Their sudden collapse without warning is often the result. The collapse of the kidneys means the destruction of a life. Bright's disease and heart disease are often the result of an over-supply of protein foods.

Prof. Chittenden of Yale University declares that 60 grams, or about two ounces of protein, are sufficient for the daily ration of the ordinary individual. This amount is needed to repair the cell life and the waste tissue. Two ounces of protein are found in one-half pound of fresh lean beef, or salt codfish; in nine hen's eggs; in one-half pound American cheese; in one and seven-eighths pounds of baked beans; in one and two-fifths pounds of peanuts; in ten pounds of bananas or grapes or eleven pounds of lettuce; in fifteen pounds of prunes, or in thirty-three pounds of apples. This reveals the fact that there must be a wise selection of protein foods. Man cannot eat the ten pounds of bananas, the eleven pounds of lettuce, the fifteen pounds of prunes, or the thirty-three pounds of apples to get his two ounces of protein. This would not furnish a balanced ration. The body needs only about 2000 calories of heat daily from the food supply. The half pound of meat would furnish only 308 calories of heat. Nine eggs would furnish 720 calories. The baked beans would furnish 1125 calories. The peanuts would furnish 3584 calories. Ten pounds of lettuce would furnish 990 calories. Ten pounds of grapes 4500 calories. Ten pounds of bananas 4600 calories. Fifteen pounds of prunes 5550 calories. Thirty-three pounds of apples 9570 calories. Man can not eat 10 pounds of bananas or 11 pounds of lettuce, or 35 pounds of apples (half a bushel) daily. He must select his protein so as to have a well balanced ration and not more than 2000 calories of heat. The following would furnish a well balanced ration with the two ounces of protein and 2000 calories of heat:

2 ounces of protein, approximately 250 calories.
2 ounces of fats, approximately 600 calories.
10 ounces of carbohydrates, approximately 1200 calories.

This will also furnish the proper proportion between the protein and the carbohydrates. Protein should be one-fifth the amount of the carbohydrates. This would furnish 14 ounces of food daily, which is also a fair low ration daily allowance.

### WATER

Practically all foods are served with a large amount of water. The ordinary foods as served from the table would increase our 14 ounces of solid food to from 32 to 40 ounces of food as served from our tables as our daily allowance on a low ration. Prof. Chittenden's estimate of the daily ration expressed in calories is 2800 calories. Atwater's estimate is 2820 calories for light work, 3520 for the man at moderate work, and 4060 calories for the man at hard work. We believe the 2800 calories is sufficient for the man at hard work. It requires 1500 calories daily to sustain life in the man of 150 pounds weight, according to Carl Van Noorden, the great German physiologist. All energies expended above the life processes must be provided in addition to the 1500 calories.

Voit estimates that the man at moderate work needs 118 grams (about 4 ounces) of protein, 56 grams (2 ounces) of fat, and 500 grams (18 ounces) of carbohydrates, making a fuel value of 3055 calories. He also estimates that the man at hard work needs 145 grams (5 ounces) of protein, 100 grams (3½ ounces) of fat and 450 grams (16½ ounces) of carbohydrates. This furnishes a fuel value of 3370 calories of heat.

### CALORIES

A calorie of heat is the amount of heat necessary to raise the temperature of about one quart of water one degree. The ordinary heat generated in the body would raise the temperature of one quart of water from the freezing point to the boiling point, in one hour. The daily amount of heat generated in the body would raise the temperature of seven gallons of water from the freezing point to the boiling point.

A gram is the measurement used by all scientists in the study of foods. There are 28.34 grams in one ounce. The low standard ration, therefore, is about two ounces of protein, when given as 60 grams. The proteins are the nitrogenous food products. Man must feed on these or die of nitrogen starvation. The demand of nitrogen in our food supply is absolutely independent of that breathed in through the lungs. This has no value as a food supply.

## DEMANDS OF NATURE

Nature's demands for nitrogen must be met from Nature's own registered laboratory, she absolutely discards all substitutes. There is but one substance out of which Nature can rebuild her wasted cell life and repair the broken down tissues and that substance is protein. Nature's demands are imperative.

If Nature must repair a muscle cell, she feeds it on protein; if she would strengthen a nerve cell, she feeds it on protein; if she would refortify a heart cell, she feeds it on protein; if the brain cell is breaking down, she strengthens and rebuilds it with protein. So with every cell and tissue of the body, they must be repaired and rebuilt with protein. The demands of the body are almost the same in the professional man and the coal heaver for the amount of protein necessary to sustain the body, although the commonly accepted theory is that the later needs a far greater amount. The leading scientists of today claim their demands are about equal. The proteins can be used for a fuel supply as well as body builders. This is at too great a cost on the vital organs, especially the liver and the kidneys. The carbohydrates should furnish the fuel supply for heat and energy, and the protein should be used only in normal amounts of about two ounces daily for the repair of bodily waste. Prof. Chittenden furnishes us the following table of food values and the relative strength of the heat producing power of each:

1 gram of protein, 4.1 large calories.
1 gram of fat, 9.3 large calories.
1 gram of carbohydrates, 4.1 large calories.

Expressing these in terms of English weight, the fuel value of the three different food elements in ounces are as follows:

1 ounce of protein, 116.19 large calories.
1 ounce of fat, 263.56 large calories.
1 ounces of carbohydrates, 116.10 large calories.

As previously stated, the body stores fats for emergencies. If no food supply is furnished the body will consume about one-eightieth of its weight daily. When half the weight of the body is consumed death will take place. This presumes a normal condition of the body to begin with.

## CARBOHYDRATES

The carbohydrates furnish the great field of our food supply. They produce the heat and energy necessary for maintaining the vital processes of the body, and generate power sufficient for our daily task. They furnish a quick fuel supply. Many of the juices of fruits can be taken directly into the blood stream without digestion. For this reason the carbohydrates have been called the kindling wood of the body, or of the fuel supply. Many of the fruit juices need none of the digestive juices to prepare them for the blood stream. Apple juice is one of the purest fruit juices. It contains pure distilled water and fruit sugar. An ounce of pure apple juice contains about 20 calories of heat, while an ounce of lean meat contains only about 38 calories. Pure unfermented and unsweetened fruit juice is a powerful germicide. The unsweetened lemon juice is one of the most powerful germicides known. No disease germ can live in the stomach or the intestines if they are well supplied with pure strong unsweetened lemon juice. Sugar destroys the medical properties of lemon juice. Most fruit juices are laxative and are especially helpful in constipation.

### PRINCIPAL CARBOHYDRATES

The carbohydrates consist of the cereals, the vegetable, and the fruits. The sugars, honey, and syrups are also carbohydrates. Some of the carbohydrates are rich in fats, while some are rich in protein comparatively. From 60 to 70 per cent of the dried legumes, and from 70 to 80 per cent of the cereals are carbohydrates. Dried peas have about 24% protein, dried beans about 22%. Peanuts raw have 25.7% protein. Rolled oats raw have 16.8% protein. White flour, low grade patent process, 14% protein. Whole wheat bread 9.7% protein. Rye bread 9%. White bread 9.2%. Graham bread 8.9%. Brown bread 5.4% protein.

The carbohydrates contain about 44% carbon. This is the same as the carbon found in our wood and coal. Most of our coal supply is supposed to have formed from vegetable carbon in the past ages. The burning of this carbon in the body by oxidation generates the carbonic acid gas. This might be called the smoke or fumes of the burnt carbon. The sugars and starches of the carbohydrates are burned in the body to generate heat and energy. Bread and potatoes yield a large amount of heat and energy when consumed in the body. One calorie of heat is the amount of heat necessary to raise the temperature of one pound of water 4 degrees F., or expressed in mechanical energy it would lift one ton 1.54 feet high. Atwater refers to the "hog and hominy" diet in the "Black belt" as illustrated by the negroes with 62 grams of protein daily and a fuel value of 3270 calories of energy per man per day. Fruits in the raw state form one of our most staple foods in the carbohydrates. They aid digestion.

## FRUITS AND VEGETABLES

While fruits come under the general head of carbohydrates, a few of them are so valuable in our food supply that they are worthy of special mention. The others will be found under fruits in the food tables. We have already referred to the apple, which is one of our most valuable fruits. It carries about 15% fruit sugar, and is rich in cellulose, which renders it especially valuable as an aid to digestion. The raw fruit or the pure unfermented juice unsweetened is a great relief in constipation. The sweeter varieties with a milk diet are great aids in flesh building with many individuals. The baked apple is one of our most wholesome foods. It is ofttimes very valuable in sickness. The fuel value of apples per pound is 190 calories. Berries carry about 20% in nutritive value and are rich in cellulose and some are rich in fruit sugar. Cherries carry about 25% of nutritive value and are rich in cellulose and carry about 1% in protein. They are a wholesome food.

### SPECIAL FRUITS

*Bananas* are a most wholesome article of food. They are richer in starch than in sugar, they carry about 1% mineral salts and a trace of fats. They are almost as closely allied to the cereals in their food properties as to the fruits. They carry about 14% carbohydrates. Their fuel value per pound is 460 calories. This is practically the same as the ordinary lean beef, or about half the fuel value of loin steak.

*Figs* form one of our most wholesome articles of food where they can be had fresh grown. The fig is the richest of all fruits in cellulose and is very laxative and a most excellent food in constipation. The dried fig stands the highest of all fruits in nutritive value, 94.5%. The fig carries but 4% in protein and very little fat, but it is especially rich in fruit sugar. It carries over 12% in cellulose. The fuel value of the fig is lower than some other dried fruits, 1480 calories per pound.

*Prunes* are a splendid article of food, either fresh or dried. They are rich in cellulose and fruit sugar. The fresh prune is a splendid flesh builder. The dried prune is one of our best commercial fruits and may be used in almost an infinite variety of dishes. They carry about 74% in carbohydrates, and about 70% in nutritive values. Their fuel value is 1510 calories per pound. They form one of our most wholesome foods.

*Raisins,* or the dried grapes, are one of the greatest foods in generating heat and energy for the body. They are rich in carbohydrates, carrying 76.5%. They also carry about 89% in nutritive value. They are very rich in fruit sugar. They furnish quick energy for the body and are very popular with athletes, especially long distance runners, as they generate quick energy and relieve fatigue. They are a splendid food for children as they are very rich in fruit sugar, which is much more wholesome than cane sugar. The sugar from the raisins passes into the blood stream without the action of any of the digestive juices. Their fuel value is 1605 calories per pound. They form a staple article of food either raw or cooked. Grapes are also very wholesome.

*Dates* hold the distinction of carrying the highest fuel value of any of the edible fruits, their fuel value being 1615 calories per pound. This is a higher fuel value than is carried by any of the fresh meats. The date is very rich in fruit sugar. It carries 78.8% in carbohydrates and 65% in nutritive value. Good dates are a most wholesome food for children, and furnish the fruit sugar in generous amounts. The child must have the sweets. The candies and the cane or beet sugars are unwholesome. The child should have the fruit sugars found all ready for digestion in the prunes, the figs, the raisins and the dates.

Fats have been sufficiently discussed, so will not be treated at this time further than to say that most persons must use them sparingly. They furnish intense heat and energy but are very hard to digest.

## MINERAL SALTS

Mineral salts furnish one of the most important articles of food from a health standpoint. It is also one of the articles of food most sadly neglected in our diet. The absence of the mineral salts from our tables and from our diet is the cause of many diseases and of much of the ill health so prevalent everywhere. The mineral salts are so vital in our food supply that I shall name them here again. We must have some of the raw vegetables and raw fruits to furnish us the mineral salts. While it is imperative that we have these salts from the raw fruits and the raw vegetables, it is just as imperative that we do not have the raw fruit and the raw vegetables at the same meal. They form a worse combination than the English and the Irish in their dispute for supremacy. They will fight by forming poisonous gases in the stomach. The mineral salts are found in the lettuce, celery, onions, radishes, raw cabbage, raw tomatoes, and raw fruits. Raw vegetables at one meal and raw fruits at the next. Chew them well, reducing them as nearly to a liquid as possible. Never use vinegar on the raw vegetables. If an acid is desired use lemon juice, which turns to an alkali and aids digestion, rather than rendering it impossible as does the vinegar.

### RAW FOOD

Some have advised against the use of raw vegetables because of the dangers of disease germs. Wash your vegetables thoroughly, then you will find no danger from disease germs. If there were any, the lemon juice, the saliva, and the gastric juices with the pancreatic juices and the bile would destroy any harmful disease germ that might be left.

The mineral salts form one of our best blood purifiers. This and a generous supply of oxygen forms the best blood purifier known to man. It is a draught from Nature's own registered laboratory and never fails. The blood is the life.

### PURE BLOOD

Where there is pure blood there can be no disease. The mineral salts and pure oxygen in generous quantities is an absolute guarantee of pure blood. The mineral salts are an absolute essential for the digestive juices of the body. They are the greatest nerve tonic known to man. They come fresh from Nature's laboratory, unadulterated, unfermented, with no alcohol to poison the system, and no poisonous effects on other tissues of the body. The body contains sufficient iron to make four common sized nails. This supply is constantly wasted and must be constantly supplied, not from a bottle, nor from chewing tacks, nor from licking a lamp post, but from eating mineral salts. Mineral salts also furnish the bone-building material. The deadly scurvy and other pernicious skin diseases with all their horrors, which come to individuals on the long voyages on the high seas, and which afflicted the prisoners in such pens as Andersonville and Libby, where no mineral salts were obtainable, tell us vividly of the demands of the body for mineral salts. Most pleasing combinations of food may be formed from the mineral salts by making of them the appetizing salads.

### SALADS FROM MINERAL SALTS

Two general principles are essential to health in the formation of these salads. They must contain no vinegar; use lemon juice as a substitute. When making salads for health, there must be no combination of raw fruit and raw vegetables. Indigestion and distressing gas formation is almost inevitable in these combinations of fruit and vegetable salads. Even the coveted and highly prized "Waldorf salad" is forbidden fruit when we are eating for health, rather than for appeasing a depraved appetite. The following salads will be found not only helpful in preparing a hygienic meal, but both healthful and appetizing. A medium serving is best. The lobster, meat, fish and shrimp salads have little to commend them from a health standpoint. They create an abnormal appetite. We recommend the raw vegetable salads because we need the mineral salts which they contain, and many will not take them in the natural condition.

### SALAD DRESSING

The dressing has much to do with a wholesome and inviting salad. The following recipe for a salad dressing will be found most excellent:

One tablespoonful of ground mustard, one tablespoonful of cornstarch, one tablespoonful flour, one egg. Stir these together thoroughly before adding the egg, then stir well, adding one-fourth of a can of condensed milk, making this into a smooth paste; add to this slowly and with constant stirring half a pint of boiling water, pouring the water in slowly so as not to cook the egg or make the contents lumpy; cold water may be added if necessary. Place this on the fire in a double saucepan and stir constantly until well cooked. Add a little boiling water if necessary to make it just a little thinner than you want your dressing, add a half teaspoonful of salt, and a soupspoonful of sugar, and a piece of butter half as large as an egg. Continue to cook for five minutes with constant stirring. This salad dressing will keep for several days if bottled. Take out the amount you wish to use for the present meal and add to sufficient lemon juice to suit the taste. It is better to put in fresh lemon juice with the amount used each meal, as it keeps better without the added lemon juice. The lemon juice can be used on the salad when preferred without putting it in the dressing. This is a fine meat dressing as well. Also excellent for sandwiches. Half a cup of vinegar boiled in this will preserve it.

A few simple combinations of salads from raw vegetables will be given. Salad oil, lemon juice, and a little salt makes a good substitute for a salad dressing if hurried in preparation.

### SALADS

*Stuffed Tomato Salad.* Pare good sized tomatoes, scallop out two-thirds of the center, make a filling of chopped tomato, minced onion and parsley, with a little cucumber or finely chopped celery, mix this well with salad dressing and fill the scalloped centers of the tomatoes, having salted to taste. Place in the ice chest for one hour and serve very cold.

*Celery-Tomato.* One cup of fine white, chopped celery; one sweet bell pepper, chopped fine; four smooth, ripe, peeled tomatoes, sliced thin; two small green onions chopped fine. Mix the celery, pepper, and onion with half a cup of lemon salad dressing, place this over the sliced tomatoes in individual dishes, place in the ice chest one hour, garnish with spray of parsley when served. Season lightly with salt.

*Cabbage-Celery.* One cup of white cabbage chopped fine; one cup of celery, chopped fine; one-half cup of cucumber, chopped fine; one tablespoonful of parsley, or onion, chopped fine. Mix thoroughly with half a cup of lemon salad dressing. Serve in leaves of head lettuce, individual dishes garnished with olives. Cool in the ice chest.

*Lettuce-Cabbage.* One cup chopped head lettuce, one-half cup of chopped cabbage, one-half cup of chopped celery or cucumber. Mix with half a cup of lemon salad dressing, serve in individual dishes with head lettuce, garnish with small round red radishes.

*Tomato Salad.* Four smooth, peeled, ripe tomatoes, sliced thin; one-half cup of white celery chopped very fine; one tablespoonful of minced onion; two tablespoonfuls of cucumber, chopped fine. Mix thoroughly with half a cup of salad dressing. Serve in individual dishes with the salad over the tomatoes. Garnish with spray of parsley.

*Potato Salad.* Boil potatoes well done, taking them out soon as tender. Slice thin, and cut fine with knives; when cold, one quart of the chopped potatoes, salt lightly. Mix with this one heaping tablespoonful of fine chopped onion or parsley. Add half a teacup full of fine chopped celery or cucumber. Stir in with the potato, adding the juice of one lemon, or half a lemon, according to the tartness desired. When well mixed stir in half a cup of salad dressing, then use one-fourth cup of same for garnishing the top, with sliced hard-boiled eggs and stoned olives or round radishes halved. Light sprigs of parsley will add to the appearance. If the salad oil flavor is desired add a tablespoonful of oil to the lemon juice. This is a fancy potato salad. The plain may be made with just the potato and the salad dressing, seasoning to taste.

*Lettuce-Tomato.* This might be called the "ever-ready salad," especially for California, as these two articles are practically always available. Place the lettuce leaves on the individual salad dishes. Slice the tomatoes, arranging them tastefully on the lettuce, and garnish with salad dressing in the center of the tomato slices. If desired a few of the outer lettuce leaves may be chopped fine and mixed with the salad dressing, adding a little salt, and placed on the tomato centers. A spray of parsley will add to the appearance.

*Plain Salads.* Plain, wholesome, appetizing salads may be made with the chopped raw vegetables above, and salad dressing. These furnish mineral salts.

### ESTHETICS AND NUTRITION

Esthetics must be reckoned with in the study of food values in nutrition. Man is a creature dominated largely by environment. All of us in a large measure are creatures of circumstances. Our lives are moulded by the thoughts we think, the friends we meet, the books we read. In the study of food values we dare not overlook the esthetic side of nutrition. God has not only surrounded us with the beautiful in bedecking valley, plain, hilltop, and mountain slope and peak, with choicest flowers and richest foliage, but he has studded the rocks beneath our feet with sparkling gems of garnets, pearls, topaz, and diamonds. He has filled the heavens with worlds, and system of worlds, stars, and sun, so that man becomes enchanted as he studies the beauty of the heavens. More than this, he has so created man, that it is only when he is in harmony with the good and the beautiful that he can properly receive, and digest, and assimilate his food.

### SUNSHINE

God's demand for the esthetic, the cheerful, and the beautiful is so indelibly written in man's being, that when there is an absence of these virtues, Nature closes up the ducts that supply the saliva, the gastric juices, the pancreatic juices, the bile and the intestinal juices, so that digestion, assimilation and nutrition are impossible. Anger, hatred, jealousy, worry, fear, and the lack of the esthetic, are so diametrically opposed to digestion, assimilation and nutrition that the individual possessed with any of these poisons is far better off without taking food at all, than by taking it when in these conditions. Digestion is impossible. The food becomes a poison in the digestive tract.

Proper nutrition from foods means first the proper recognition of the esthetic. The table linen must be clean. The room must be in order. The food on the table must be tastefully arranged. Bouquets on your table are ofttimes more valuable than porterhouse steak. Bright, cheerful, sunny dining rooms are far more valuable as a health asset than bottles of tonic. Never have your medicine bottle in sight of the dinner table. Never talk about this or that article of food not agreeing with you. Never discuss your stomach trouble, your liver inactivity, your kidney derangements, your indigestion, constipation, or your biliousness at the meal hour. Bury all your ills, your aches and pains, and your diseases, before you come to the dinner hour. More than 75 per cent of them are imaginary. The best medicine for the remainder at meal time is ''forget it.'' Banish even the thought of disease and care from the meal hour, if you would find digestion, assimilation and nutrition.

Papa, mama and the children must be neat and clean. Sunshine must reign in the face, the heart, the life. No matter what passions may seize you at other times, mirth, cheerfulness, joy and sunshine must reign at the meal hour. Cultivate this at any cost, and practice it at any price, and the result will pay you more than a thousand per cent on your investment. It will come to you in happiness and health, long life and peace, here and hereafter.

*''Talk happiness. The world is sad enough*
*Without your woes.*
*Talk health. The dreary never-changing tale*
*Of mortal maladies is worn and stale.*
*You cannot charm, or interest, or please*
*By harping on that minor chord disease.''*

—Ella Wheeler Wilcox.

# SELECTION OF FOODS

## THEIR SELECTION, DIGESTION, ASSIMILATION AND NUTRITION

One of the great problems of the race is the problem of food. A large portion of the commerce of the world is made up by furnishing the food supply for the nations of the earth. The major portion of the time and energy of the masses is expended in providing food to sustain the body and generate sufficient heat and energy for the demands of life. Millions of the masses toil through life and are unable to provide anything for themselves and their children, outside of their food, their raiment, and a temporary home not their own. Hence the problem of food is one of life's most serious problems. The problem of food is rapidly becoming one of the great national, scientific and economic problems of the nations. It has already assumed the proportions of an international problem. The food problem is today engaging the talent of our greatest scientists and statesmen of the world.

### FOOD AND HEALTH

The problem of health depends largely on the problem of our food supply. Our pure food laws are not only becoming state-wide but they are becoming national and international. The phenomenal high cost of living in the past five years, and especially the increased cost of food products, has added materially to the seriousness of the food problem, especially in its relation to health. The masses have been forced to subsist on poorer food because of excessive prices. Many manufacturers inspired by the spirit of greed and avarice have adulterated their food products, and this has contributed to the degeneration of the health of the toiling masses. Health is the capital stock, and the greatest asset of the wage earner and must be protected at any cost. The food problem and the health problem are vitally related.

## FOOD AND BRAIN POWER

Not only is the problem of health bound up with the food problem, but the brain problem is vitally associated with the food problem. The brain products of the student, the scholar, the scientist, and the statesman depends upon the selection, the digestion, the assimilation, and nutrition of the food supply. Brain power is dependent on the food supply. Nations are today awakening to this fact. Already Germany is providing free meals for the students in her public schools as an investment in her future citizenship. This would be a far better investment not only for Germany, but for Great Britain and the United States, than their millions expended in great battleships, rendered obsolete in five years by superior construction and the ravages of time.

Brain power may be impaired and vitiated by too much food, as easily as by too little, or by an inferior quality. The health may be impaired and broken down as quickly by an abnormal over-supply of food as by too small a food supply.

## DANGER SIGNAL

The danger signal for the American people lies in the line of an over-supply of food. This is true both of the masses and the classes. The abnormal food supply of the American people is forcing them to dig their graves with their teeth. Auto-intoxication is numbering her victims by the hundreds of thousands all because of the abnormal food supply that poisons, rather than nourishes the system.

Our happiness and pleasure, insofar as they are regulated by our physical condition, depends very largely on our food supply. Nothing renders an individual more miserable from a physical standpoint than does an abnormal supply of food that poisons the whole system and absolutely destroys all happiness and pleasure. Some of the evils caused by an abnormal food supply are to be found in dyspepsia, indigestion, constipation, rheumatism, gout, lumbago, colds, diabetes, Bright's disease, and heart disease. These diseases, which are the product of an over-supply of food, wreck the health, the brain, the happiness and pleasure of life, and number thousands and hundreds of thousands with the dead from twenty to twenty-five years before their time.

### THE SELECTION OF FOOD

"*A light supper, a good night's sleep and a fine morning have often made a hero of the same man, who, by indigestion, a restless night and a rainy morning would have proved a coward.*"—CHESTERFIELD.

The selection of food involves the quantity of the food supply, the quality, and the combinations. The quantity of the food supply is perhaps the most vital. If we have met the condition of the body in caring for the eliminating organs, the stomach, the intestines, the liver, the kidneys, the lungs, and the skin, we can handle a normal amount of almost any kind of food. The healthful condition of the eliminating organs of the body depend upon our breathing, our bathing and our exercises.

Oxygen is life. The lungs must be furnished sufficient oxygen to purify the blood. There must be 5½ inches chest expansion and a lung capacity of from 250 to 350 cubic inches, so that all the air sacs of the lungs may be filled. The oxygen filters through these air sacs into the blood, and the red blood corpuscles carry the oxygen through the arteries and capillaries to every cell of the body. These cells also carry the poisonous carbonic acid gas to the lungs and this is exhaled through the walls of the same air sacs as smoke filters through our lace curtains. The white blood corpuscles must have oxygen to maintain their vigor, so that they may destroy the disease germs that assail the body. A generous supply of oxygen means pure blood. Oxygen is Nature's own tonic and the only real blood purifier. Pure blood means good health, vitality, vigor and strength.

### BATHING

Bathing is one of the absolute essentials for good health. The functions of the skin must be normal in order that certain poisons may be eliminated and that the food may be properly assimilated. We keep the more than 3,000,000 pores of the skin open for the elimination of the poisons through the more than thirty miles of sewage emptying on the surface of the skin. We keep the elimination through the skin perfect by the air bath, the sun bath, the friction bath, the sweat bath, the hot and cold water bath. The skin weighs about 17 pounds for the average person and covers 17 square feet of surface. It can hold one-half the blood supply of the whole body. The cold bath drives the blood from the skin to the internal organs. The hot bath draws the full supply of blood into the skin. We take our friction bath and our exercise, then our hot bath and we have the full supply of blood in the skin. We next take our cold bath and this drives the blood from the skin to the internal organs. We dry our body by the friction bath and immediately we feel the reaction of the blood rushing back to the skin. This has thoroughly flushed the arteries, the capillaries and the veins and we immediately feel the effects of Nature's best tonic, the combination bath. When the time comes for food our system is prepared for it and we find real genuine nutrition. The sweetness of food depends on the preparation of the body to receive it. A crust seems as a wheaten loaf.

Exercise is another one of the prime necessities of the body, in order that we may properly digest and assimilate our food and derive from it the proper nutrition. Neither quantity, quality, nor purity of food can furnish nutrition for the body until the normal conditions have been met and the body is prepared to receive the food.

### THE QUANTITY OF FOOD

When we have selected a pure quality of food, the quantity becomes the next vital problem. The gluttony of the American people is appalling. The roll of diseases previously mentioned as being caused from an abnormal amount of food are all preventable diseases. Over-eating is a slow form of suicide. The Christian prays for the drunkard, that he may be delivered from the curse of strong drink, and well he may. We labor with them and plead with them that they may not wreck soul, body, and brain with strong drink. Is it a greater sin in the sight of God to wreck body and brain by strong drink, than it is to wreck body and brain by over-eating?

## SUICIDE

We hold up our hands in holy horror at the thought of suicide and murder. Is it any greater crime to commit suicide by the taking of a deadly drug that will cause death in a few hours, than it is to continually take an abnormal amount of food that must inevitably kill you in a few years? Men in the highest positions of trust, and fraternity, and jurisprudence, and science are wrecking their lives physically and intellectually by the sin of over-eating. Many of them are dying prematurely, cutting off ten, fifteen or twenty years of what should be the most fruitful years of their lives, by over-eating. An abnormal supply of food is slow suicide. The man who prizes his health and his life must be satisfied in a normal amount of food. He must make his choice between an abnormal food supply, poor health and a short life, and a normal food supply, good health, and a long life.

## RESULTS OF AN ABNORMAL FOOD SUPPLY

When we eat more food than we can digest and assimilate the surplus food is crowded into the stomach, the small intestines, and the colon, which is called the waste basket of the body. This surplus food crowded out of the stomach, into the intestines, and into the colon, must be bacterially digested; in other words it must decompose and rot in the intestines and the colon. The gases from this decomposing food are carried by the circulation of the blood throughout the whole system. The cell life and the brain are poisoned by these foul gases which produce auto-intoxication. In other words the individual is drunk from the fumes of alcohol brewed in his own private distillery, from the decomposed food, forced to rot in the intestines.

### CAUTION

When your physician tells you that you are suffering from auto-intoxication, it is a scientific way of telling you that you are a glutton. This abnormal food supply clogs up the liver, the kidneys, the lungs, and the skin, so that all the eliminating organs of the body are stopped. We not only suffer with auto-intoxication, but Nature must find some means to eliminate this poison. Nature's method of purification is by fire. She builds a fire, or in other words, generates a fever that will consume this accumulated poison. This fever we call a cold. Over-eating has produced a cold. The cold is the preliminary step in all pulmonary diseases which number with the dead more than one-fourth of the human family. Add to this the deaths from heart disease, kidney and liver troubles, and the untold agony and misery of dyspepsia, indigestion, constipation, gout, lumbago, and rheumatism, and you have a faint picture of the sin of over-eating and the curse of gluttony.

I speak from ''inside information'' when I speak of the sin of over-eating and gluttony. Until five years ago I obeyed to the letter that scriptural injunction, ''Eat what's set before you and ask no questions.'' If I asked anything at all, I asked for more. I did not know that I was wrecking my physical life, my nervous system, and my intellect as well. I increased in weight until I reached about 246 pounds. I grew a balloon that measured 53 inches around the waist. My physical and nervous breakdown followed. This came upon me like a ''bolt from the blue.'' I thought at first I was simply tired from over-work, but soon found I was almost a physical and nervous wreck. The normal care of the body that I am pleading for in this article, thoroughly practiced by me for two years, fully restored me to my former self, and during the past three years I have performed the greatest service of my life. I feel that I owe my health and my life to this system of health culture which teaches the normal care of the body along the lines of diet, breathing, bathing and exercise.

### WHAT IS A NORMAL FOOD SUPPLY?

For the heavy eater, a normal food supply would be about one-half the amount the individual is now eating. In my own case it meant giving up the breakfast entirely, which was my heavy meal. It meant cutting the other two meals almost in half. By this method I reduced my weight from 246 pounds to 175 pounds in my light slumber robe. I reduced my waist line from 53 inches to 37 inches. I exchanged my wrecked nervous and physical condition for a strong constitution, that has almost no limit to endurance and efficiency. I have followed the no-breakfast plan for five years. I have remained with the low ration by continuing the light meals for dinner and supper. I scarcely know what fatigue means. The normal food supply will not reduce all classes in weight. It will bring you to your family tree. If you are overweight it will reduce you. If you are underweight it will increase your weight eventually. You may fall away a few pounds to begin with, but you will regain this and more. If you are a light eater you will not need so great a reduction in the quantity of food. Omit your breakfast, then regulate the quantity of food by testing. Cut down the other two meals one-fourth, unless these meals have been very light. Try this for two weeks and if you improve continue the low ration. Continue the no-breakfast plan indefinitely. If you feel faint for the first few days on no breakfast, take a glass of water and squeeze the juice from half a lemon in it and sip this occasionally after about nine o'clock.

### THE COMBINATION OF FOODS

The combination of foods is almost as important as the quantity. The body must have a well balanced ration. We need the protein, or muscle building foods, in normal quantities. These are the meats, the peas, the beans, the nuts, the eggs and the cheese. The daily allowance of protein, selected from the above list, is but two ounces.

One of the great burdens in the abnormal supply of food is in the great surplus of protein. There must also be a proper amount of the carbohydrates, the fruits, the vegetables and the cereals. These furnish the heat and energy necessary for the body. The proteins furnish the elements necessary to repair the bodily waste. They are the body builders. The mineral salts are found in the raw lettuce, celery, onions, radishes, and cabbage, also raw fruits. These are necessary aids to digestion, and to furnish the mineral supply of the body. The body needs iron. You can not lick it from a lamp post, nor drink it from a bottle. You must get it from the raw vegetables; raw tomatoes and cucumbers also furnish mineral salts. Select the raw vegetables that best agree with you and get from them your mineral salts for the body. Raw fruit furnishes mineral salts also, but raw fruit and raw vegetables must never be eaten at the same meal. They will set up a gaseous condition of the stomach. Eat raw fruit at one meal and raw vegetables at the next. One raw vegetable for a meal is sufficient. In the selection of our food supply we must also reckon with the fats. Fats are found in our meat, nuts, oils, butter, and cream. They furnish heat and fuel for the body. One ounce of fat produces twice as much heat in the body as one ounce of either protein or carbohydrate. The body can use but a limited amount of fats, except in very cold climates where it is necessary to generate a large amount of heat in the body.

## HEAT AND ENERGY

The human body will generate heat enough every hour to raise the temperature of one quart of water from the freezing point to the boiling point. There is sufficient heat generated in the average body every 24 hours to boil seven gallons of ice water. Without food the scientists tell us the body will consume one-eightieth of its weight daily. Death will ordinarily not occur until one-half the body has been consumed. When an acid is desired for raw vegetables, vinegar should never be used—use lemon juice. Vinegar pickles the food and renders it impossible for the stomach to digest it. Lemon juice turns into an alkali in the stomach and aids digestion and assimilation. Write "Thou shalt not" on the vinegar jug, then smash it forever. Salt, unless used very sparingly, is also injurious to the body. We use so much salt that our perspiration is salt, our tears are salt, and when we contract cold salt water pours from the nose, the throat and the eyes. Salt is a great producer of colds. Pepper, spices, and all highly seasoned foods are injurious to the health of the body and should be avoided. The ordinary individual can handle but a very small amount of fats. Lemon juice with salad oil or olive oil renders a great aid to digestion. Lemon juice is one of our best germicides. It will destroy many deadly disease germs. When using it for health always use it without sugar.

### CHEW THE FOOD TO A LIQUID

We are now ready to begin the process of digestion. Our varieties of food must be small. Never serve more than two vegetables cooked at one meal. A small variety of wholesome food greatly aids digestion. All foods have to be assorted in the stomach according to the time required for digestion. The greater the variety the greater the problem of digestion. There are many reasons why we should chew the food to a liquid. When the lessening of the quantity of food is one of the great problems of health, and when the average stomach rebels against this lessening of the quantity of food, the chewing of the food to a liquid aids greatly in the solution of this problem. When you have selected one or two cooked vegetables for a meal, you can also select one dish of protein food, eggs, peas, beans, cheese, or a small amount of meat. You should remember that about 60 grams or two ounces is all you should have for the day in protein food. You can select your mineral salts from the raw lettuce, celery, onions, cabbage, or radishes, selecting the one most convenient, and the one that agrees with you best. Select one kind of bread, and your favorite dessert. You must have no raw fruit in your meal when you have raw vegetables. Salads with a combination of fruits and vegetables are most unwholesome and should never be served. Fish and poultry and game are also proteins and a little lighter and more wholesome than the ordinary meats. They form a splendid substitute for beef, mutton or pork.

## THE HOG

The Hebrew has that old scavenger, the hog, sized up pretty well. Give him a wide berth in your diet. You can't afford to eat pork unless you are doing the hardest and most strenuous manual labor, even then the less hog you eat the better it is for you. A hog pen will poison the air around it for almost half a mile. It creates such a stench that you have to hold your nose for a block as you pass it. The hog is the most omnivorous creature of the animal world. Nothing is too rotten for his relish. He revels in the foulest of rotten carion. At times snakes and the excreta of other animals are to him a dainty morsel. After he has devoured all forms of filth and rotten carion and made himself more of a scavenger than even the buzzard and the vulture, man often imitates him in gulping down his food without chewing it until the assertion is apropos, "He eats like a hog." Not satisfied with this likeness to the hog in his eating without chewing, man turns around and eats the hog. If you are eating for health do not eat that old scavenger, the hog.

## MASTICATION

We do not advocate a certain number of chews for each mouthful of food, but we do advocate thorough mastication. This affords ample time for the flow of saliva. Digestion begins in the mouth, by mastication and moistening with the flow of saliva. Mastication affords time for the flow of saliva so that all the food shall have this initial digestive juice. The saliva changes the cooked starch into sugar. This sugar is called dextrine and is the same as the sugar found in the date, the fig, the prune, the grape, and other sweet fruits.

It is not the same as our commercial sugar. The saliva can not digest raw starches, and poorly cooked starches are digested with great difficulty. The natural flow of saliva is about three pints per day. The salivary glands are stimulated in the flow of saliva, by hunger, the sense of smell, and by keen anticipation of food. Saliva seems to flow according to the needs of our food supply. Dry toast causes an increased flow of saliva. Saliva is also a germicide. It destroys many harmful germs that enter the mouth. It moistens and lubricates the mouth and throat. The mind has power to stimulate the flow of saliva. Think of some most delicious food, and immediately the flow of saliva begins.

The flow of saliva and all digestive juices, the gastric juices of the stomach, the pancreatic juices, the intestinal juices, and even the bile from the liver, may be stopped by anger, hatred, jealousy, and fear. Excessive fatigue and worry will also stop the flow of all these digestive juices. The best of good cheer and sunshine must pervade the meal hour or our food becomes a barrier and a burden to the body, rather than furnishing the elements of nutrition by which we generate the heat and energy necessary for our bodily needs.

### THE STOMACH AND DIGESTION

The stomach is more of a melting pot than a digestive organ. Our food is here prepared for assimilation. Having properly selected the necessary quantity, and the proper variety of wholesome food, and having chewed the same to a liquid, it now passes into the stomach, and has passed out from under the control of the objective mind. The power of the conscious mind over our food supply is practically ended when we have swallowed our food, only in the fact that we can furnish the conditions of the body necessary for proper digestion of the food supply. All the vital principles of life are under control of the ''Abdominal brain.'' God has said to the finite mind, ''So far shalt thou go and no farther.'' The issues of life are in the hands of the Infinite. He has placed them under the ''Abdominal brain'' or the involuntary nervous system. Man can not will to end his existence. It requires an outward act to commit suicide. The breathing of the lungs, the digestion of the food and the assimilation of the same, the beating of the heart, the action of the intestines, the liver and the kidneys, are all beyond the power of the finite mind. You can not will that these vital actions shall cease. Were such the case, thousands in a moment of anger, despondency, jealousy, disappointment, and business reverses, would simply will to cease their existence. When suicide requires an outward act, and man must lift his own hand against his own body to terminate his life, this gives him pause, his passion passes, and the crisis is over, and the life is saved.

Another kindness of the Infinite in placing the vital processes of life under the involuntary nervous system is seen in the fact that the conscious mind becomes weary and fatigued, it even becomes deranged, and the individual is pronounced insane. Reason is absolutely dethroned. The conscious mind needs rest and sleep. Under these conditions the involuntary nervous system carries on the vital processes of life. There is practically no change in the breathing, the heart beat, the action of the stomach, the liver, the kidneys, the intestines, and the skin. In sleep, fatigue, and mental degeneracy, these organs continue to perform their functions.

### FOOD AND THE STOMACH

So when the food enters the stomach it is beyond the power of the finite mind. The stomach involuntarily performs its functions of melting down the food and preparing it for assimilation.

Soon as the food enters the stomach there begins the flow of the gastric juices. Many have estimated that the flow of the gastric juices of the stomach amounts to from 8 to 10 pints per day. Pepsin and rennin are the principal ferments in the gastric juices. Hydrochloric acid and lactic acid perform a large part in the digestion of food. Starches are digested largely in the upper portion of the stomach when properly moistened with saliva. An over production of the above acids produces dyspepsia. Protein is digested largely by the pepsin. This dissolves the tissues of meat and breaks up the other proteins into minute particles. The hydrochloric acid is a powerful germicide and destroys the harmful germs that enter the stomach. Digestion is also aided in the stomach by the peristaltic action, or churning of the stomach. Slight muscular waves, causing a contraction of the stomach, begin at the upper portion of the stomach and follow the entire length. These require about 40 seconds to pass over the stomach. A new wave starts every ten seconds during digestion, so about three of these waves are passing over the stomach at the same time. This churning of the stomach and the digestive juices reduces the contents of the stomach to a milky chyme.

### CHYME

When the food has been reduced to this milky chyme it is then ready to pass into the second stomach, or duodenum, the small ring like muscle, called the sphincter muscle, now relaxes and a portion of the prepared acid food passes into the duodenum. But a small portion of this food is permitted to pass to the duodenum at one time; the muscle again contracts and closes the gateway from the stomach. When the chyme is poured into the duodenum, other digestive juices are emptied into the duodenum.

### BILE AND PANCREATIC JUICES

The liver has been manufacturing bile and storing it in the gall bladder. This has been manufactured from the impure blood of the digestive system, carried to the liver by the portal circulation. The waste matter from the broken down cells and tissues are also manufactured into bile. This is poured into the duodenum from the gall bladder and performs its function in the digestion of the food supply.

The fats have not been affected by either the saliva or the gastric juices. The bile must reduce the fat so that it may become available for assimilation. Nearly three pints of bile are manufactured daily by the liver and poured into the digestive tract. The broken down red blood corpuscles are also manufactured into bile. About 8000 red blood corpusles are retired every second, 500,000 every minute, 30,000,000 every hour, 700,000,000 every day. Bile acts on fats in the duodenum as lye acts upon them in soap making. Bile also aids the pancreatic juices in the digestion of the starches. The liver manufactures 900 pounds of bile annually. Bile retards putrifaction in the intestines unless there is an abnormal supply of food. The bile also prevents constipation.

## THE PANCREAS

The pancreas is a digestive organ lying just back of the stomach. It resembles a dog's tongue in shape. It is about 7 inches in length, 1½ inches in width, and weighs about 3 or 4 ounces. The pancreas pours into the duodenum about 2 pints of pancreatic juices daily. The pancreatic juices transform the acid chyme of the stomach, which is poured into the duodenum, into an alkali. This pancreatic juice acts on all kinds of foods in digestion. The amylopsin ferment of the pancreatic juices digests the starches, transforming them into sugar, and is more potent than the saliva. The tripsin acts on the protein and completes its reduction. The steapsin acts with the bile of the liver in the reduction of fats. Another ferment is added to this prepared food when it passes into the intestines; this ferment is called invertase. Invertase transforms cane sugar into fruit sugar. All cane, maple, and beet sugar must be transformed into fruit sugar, or dextrine, before it can be assimilated from the small intestines.

## ASSIMILATION

The food has now been thoroughly prepared for assimilation if we have followed dietetic principles and it passes from the pylorus into the small intestines and now the real work of assimilation begins. The scientists tell us that there are 10,000,000 suction pumps in the membrane of the small intestines; these suction pumps draw the prepared food into the membrane of the small intestines and the food now enters the blood stream. All sugars (this includes starches transformed into fruit sugar; and cane, maple, and beet sugar transformed into fruit sugar) are carried through the portal circulation to the liver and are there transformed into glycogen; the surplus supply is held in storage by the liver and dealt out as the body can use it. The proteins are also carried to the liver by the portal circulation; they have been transformed into peptones, by the pepsin of the stomach.

When the sugars and peptones have been carried to the liver by the portal circulation, the portal vein branches all through the liver and by a capillary circulation this food is carried to every portion of the liver, the sugars being transformed into glycogen, and the peptones having an indefinite action by the liver. This blood filters out to the capillaries of the hepatic vein and is then picked up by the hepatic vein. The liver also receives a blood supply from the hepatic artery; this blood also filters through capillaries and is also drained into the same hepatic vein as the food laden blood from the portal circulation. The hepatic vein empties this blood into the post caval vein under the diaphragm. The fats have been carried around the liver and are emptied into the main blood stream by the lymph, or thoracic duct. All the food laden blood and all the blood from the hepatic vein unites before it is poured into the heart. All the blood that has aided in the digestion of the food, the blood from the stomach, the blood from the duodenum, the blood from the pancreas, the blood from the intestines, is carried out of the ordinary blood channel, and by the special portal circulation is carried to the liver and is there filtered, and the impurities manufactured into bile. This is called the portal circulation of the blood.

*Pulmonary Circulation*—The food laden blood is emptied into the right side of the heart from the veins, in the upper chamber called the right auricle. While the heart is at rest the blood drops, by the lifting of a valve, into the right ventricle, or lower chamber of the heart. The heart now contracts and this six ounces of blood is forced from the lower chamber, or right ventricle, into the pulmonary artery which carries the blood to the lungs for purification. The capillaries of the lungs carries the blood to every minute portion of the lungs. The lungs are filled with 725,000,000 air sacs; these air sacs are filled with the inhaled oxygen, this oxygen filters through the walls of these air sacs as smoke filters through our lace curtains, and the red blood corpuscles of the blood are ladened with oxygen to purify the blood.

These same red blood corpuscles have carried their load of carbonic acid gas, bearing the poisons from the body, to these same millions of air sacs in the lungs. They here discharge their cargo of carbonic acid gas through the same delicate air sacs of the lungs, filtering once more as the smoke through the lace curtains. This carbonic acid gas is exhaled with the expired breath, carrying the poisons from the blood. The blood purified by the inhaled oxygen now filters through the capillaries into the pulmonary vein and is returned to the left auricle, or the upper chamber on the left side of the heart. While the heart is at rest, the blood drops through the lifted valve, into the lower left chamber of the heart, called the left ventricle.

*Systemic Circulation*—The six ounces of purified blood, cleansed by the elimination of the carbonic acid gas, and vitalized by the oxygen inhaled through the lungs, is now resting for a moment in the left ventricle of the heart. The heart beats, or contracts, and this six ounces of purified blood is forced into the aorta, that great arching artery of the chest. This artery sends its branches both upward and downward, to the head and to the feet, to the arms and to the legs, to the remotest, and minutest portions of the body, causing every portion of the body to pulsate with new life blood. This blood is not only freighted with pure oxygen, but it is also freighted with the elements of nutrition from the food supply.

*Lymphatic Circulation*—This food laden blood forces its way through the thousand miles of the blood stream. The muscular action of the arteries and capillaries, a kind of milking operation, forces this blood to the minutest capillaries. In the capillaries the liquid portion of the blood filters through the walls of the capillaries, and only the blood cells remain in the arteries and capillaries. This filtered blood ladened with the nutrition from the food supply, leaking from the capillaries, carries the elements of nutrition to the tissues and cells of the body. The real feeding of the body now begins—the feeding of the cell life. But little actual nourishment is derived from the food until the feeding of the cell life has actually begun, which is of necessity some time after the eating of the meal.

### NUTRITION FROM FOOD

The feeding of the cell life is purely a la carte. The tissue cell selects tissue food, the nerve cell selects nerve food, the muscle cell selects muscle food, the bone cell selects bone food, the brain cell selects brain food. Here is where we find the absolute demand for an abundance of oxygen. When the selected food is in the cell, the body derives no strength from that food until the particle of food in the cell is met by the oxygen carried to the cell life by the red blood corpuscles; then oxidation, or combustion takes place generating the heat and energy necessary for the demands of the body.

This may better be illustrated by the combustion of the gasoline in the cylinders of the automobile, generating the power necessary to run the machine. The heat generated in the body in one hour is sufficient to raise the temperature of a quart of ice water from the freezing point to the boiling point. The heat generated in the body in a single day is sufficient to raise the temperature of 7 gallons of water from the freezing point to the boiling point. This heat produces the warmth and energy necessary for the requirements of the body. Every exercise of the muscle demands added energy from the nutrition of the body. Food alone can not produce this heat and energy. Oxygen is an absolute essential. Oxygen is also the great germicide. It will destroy the deadly disease germs. The selection of wholesome food is of prime importance. The fact that the body can digest and assimilate but a limited amount of food renders the abnormal food supply dangerous.

## PROVISIONS FOR HEALTH

Health is more contagious than disease. The infidel who said, "Had I been God, I should have made health more contagious than disease," simply showed his ignorance of the human body. God has provided every provision for the contagion of health. Man's ignorance, wilful neglect, and criminal abuse of the body is the sole cause of disease. The normal body is armor clad against disease germs. The epithelium, or lining, of the nose, the mouth, the throat, the lungs, the stomach, and the intestines, as well as the vital organs, the heart, the liver and the kidneys, is absolutely armor clad against disease germs, when the body is in normal condition. When the body becomes abnormal through ignorance, neglect and wilful abuse then the lining becomes vulnerable, and the disease germs make a successful assault on the body.

## BLOOD CORPUSCLES

The Infinite has not only provided the red blood corpuscles to carry oxygen to every cell of the body through the thousand miles of the blood stream, and to carry the food to the same cells for the nutrition of the body by the food laden blood, but he has provided the 60,000,000 white blood corpuscles, as the marine soldiers and defenders of the body against the invasion of the deadly disease germ. These white blood corpuscles have been called the "White Navy" for the defence of the body. When the body is in normal condition these marine warriors will assault and slay every disease germ that enters the blood stream. They literally slay and eat. They feed upon the bodies of the slain. They fuse their bodies together for assault against a superior foe. They form their armies, their divisions, their companies, their battalions around a wound in the body, that they may assault the deadly disease germs that may enter through the wound. Their army masses literally by the millions in their assault against the disease germs. The swelling about the wound is caused by the millions of white blood corpuscles massing in battle array. This shows the marvelous provisions for the preservation of health in the body. The white blood corpuscles become scavengers when the battle is over and devour the bodies of the slain. The circulation of the blood and the patroling of the thousand miles of the blood stream by these wandering warriors, and the feeding of the cell life with oxygen and food is one of the great marvels of science.

These white blood corpuscles are so small that they can pass through the walls of the arteries and capillaries, and pursue the disease germ into the tissues of muscle, nerve, bone and brain. These are only a few of the marvelous provisions of the Infinite for the preservation of health in the human body. Give the body normal care and health is more contagious than disease. Disease is possible only when we have continually violated the laws of health by ignorance, wilful neglect, or criminal abuse. Give the body a normal food supply, well selected and thoroughly prepared for digestion, by thorough mastication. Furnish normal exercise so that all the nerves and muscles may be maintained active. Furnish the lungs with sufficient oxygen to purify the blood and feed the cell life. Preserve the proper elimination of the skin by the air baith, the sun bath, the friction bath, and the sweat bath, the hot and cold water bath, and you will find the contagion of health in your own body. Through your knowledge you may help to impart it to others.

# FOODS AND DIGESTION

The twentieth century man lives to eat. He should eat to live. Over-eating and wrong combinations of food is the crime of the century. This crime increases as civilization advances and prosperity develops. Scarcity of game and food and the uncertainty of the chase forces the savage ofttimes to moderation in his eating. Civilization and prosperity know no bounds and have no limit in eating, save that imposed by capacity. Man's gluttony forces him to obey that scriptural injunction, ''Eat what's set before you, and ask no questions for conscience's sake.'' If he asks anything, it is for more. Digested and assimilated food builds tissue and yields energy. Undigested food when taken in larger quantities than the system can handle, decomposes in the stomach and intestines. It ferments and brews an alcohol more deadly than that of any still in the land. This produces auto-intoxication. The food is all received into the stomach, is there transformed into chyme and passes into the pylorous as an acid. When it meets the juices of the intestines the alkali turns the acid to an alkaline.

## DIGESTION

Digestion begins in the stomach and continues in the intestines. The liquids are absorbed by the cell feeders in the intestines. Assimilation and nutrition really begins, when from the small intestines the blood begins to absorb from the transformed chyme, such nutritive products as the peptones, the dextrose, the lecolose, the emulsions formed from fat, and the fatty acids. The blood carries these nutrients to the various portions of the body to repair the tissues, rebuild the broken down cells and generate heat and energy for the activities of thought and action. Every vibration of the nerve, every action of the muscle, every heart beat, every thought, every volition, every breath, has its own specific demands upon this generated energy. The demand that we have wholesome food, and proper quantities for the nutrition of the body, is imperative.

The dynamo must constantly generate new energy, or the efficiency of the whole body is impaired. This makes it imperative that we know something of foods and food values. That we become acquainted with the demands of the body for nourishing foods. That we shall know what foods to eat to supply the necessary demands of the system for protein, for carbohydrates and for fats. The time of digestion varies with the kind of food used. Raw eggs whipped, digest in one and one-half hours. Soft boiled eggs, bean soup, chicken soup, raw oysters, broiled steak, each digest in three hours. Hard boiled eggs, mutton broth, stewed oysters, in three and one-half hours. Veal chops, boiled chicken, roast duck, in four hours. While beef liver, or lamb chops, digest in two hours, roast pork requires over five hours for digestion, boiled cabbage four hours and a half, boiled beets, four hours, green corn, boiled turnips, three and one-half hours.

### BILE

Bile is an important digestive fluid. About two and one-half pounds of bile is secreted daily by a well person. The liver is the manufacturing plant for bile. It passes through the hepatic duct into the gall bladder, then into the intestines. The bile in the intestines prevents putrification, unless food has been taken in abnormal quantities. Waste matter from the intestines passes into the colon, called the waste basket of the system. When over-crowded from too much food this may become a source of poison for the whole system. This should not become a garbage heap as it necessarily must when man becomes a glutton and a gourmand.

### FOODS DEMANDED

The man at moderate work should have twice as much protein as fats and four times as much carbohydrates as protein. The principal protein foods are meat, peas, beans, eggs, cheese and gluten of wheat. The principal foods for fats are: Fat meats, butter, oils and nuts. The foods rich in carbohydrates are all foods produced from wheat, rye, corn and oats, also vegetables, green corn, fruits, and especially dried fruits, all sugars and sweets. Mineral salts are also essential. These come largely from raw vegetables, celery, lettuce, radishes, green onions and raw tomatoes. These will help to furnish the iron necessary for the body. Man must have iron. You can't get it by chewing nails, licking lamp posts, or sucking bottles. Let Nature feed you from her own storehouse, the raw vegetables. Select from these foods the ones that agree with you. I don't mean the ones that agree with your taste. Taste is in the mind. Any man who can change his mind can change his taste. Select the foods that agree with your system, in the general proportion as given above and you will have proper nutrition for the whole man.

Always remember it is far better to under-eat, than to over-eat. Most persons would be infinitely better on half the amount of food they now use. This change would eradicate much of our suffering from indigestion, constipation, sick and nervous headache, and rheumatism. Add to this diminished food supply, a reasonable amount of scientific exercise and these ills will practically become a thing of the past. The mind energy will become intensified and the whole body will be strengthened, rejuvenated and invigorated.

### MEATS AND VEGETABLES

Vegetable foods contain large amounts of carbohydrates, of which sugar and starch form a large percentage. Animal food has but a small amount of these ingredients, less than 1 per cent, but is rich in both protein and fat. Fat and protein are found only in small quantities in vegetable foods. Protein is the great body builder and cell repairer. This element of food is needed in almost equal amounts by the man at the desk and the coal heaver. The man at hard labor needs not more meat and peas and eggs and cheese, so much, as more fats. This adds to his store of heat and also to his energy. Protein and fat combined furnish the fuel necessary to produce muscle, heat and energy. Energy alone is more economically produced from vegetable food than from animal. There is an economy of energy in digestion.

### MEATS

All meats contain two elements, lean and fat. Muscular tissue is made up of small bundles; these are bundles within bundles and form the coating of the muscle tube whose diameter is said to be only 1-200 to 1-1100 part of an inch. The fats are woven in around these bundles and serve as cushions and lubricators. The muscle fiber or bundles are securely bound by muscle tissues and thus held in exact position. The flavor of meats is determined by the nitrogenous extractives, contained in the small tubes. This flavor is changed by the food on which the animal feeds, by age and by condition at times of slaughter. When the atmosphere is pure and meat can be kept for ten days in the open air, the flavor is greatly improved.

Prof. C. T. Elliott and the writer used to hunt in the high Sierras at an altitude of from 8000 to 10,000 feet. We could kill and dress a sheep or deer, hang the carcass in a tree, protected from the flies by thin cloth or mosquito bar. The meat would keep in perfect condition in the month of August for two weeks unsalted. We never found trouble in detecting that the best was kept until the last of the feast. My mouth waters yet for those choice chops and steaks. I have dined at many of the greatest hotels our continent affords, scattered from New York to San Francisco, I have eaten the meats prepared by our nation's greatest chefs, but never have I found sweeter viands than the venison cured for two weeks in "God's Great Out of Doors" in the high Sierras of California. Some one will whisper, natural hunger lent enchantment to the venison. Yes, that is true, but no man has a right to place a single morsel of food in his mouth at any time until there is a demand for food from natural hunger.

### HOW TO EAT MEAT

Most scientists agree that uncivilized man eating his meat raw finds no less nutrition. His problem of digestion is no greater. Raw meats digest more easily than cooked meats. However, the added danger from tape worms and trichina and other sources leaves the decision in favor of cooked foods. Rare meats are more nutritious than well cooked. Meat must be cooked a long time to destroy all parasites and bacteria.

### BOILING MEAT

This process robs the meat of much nutrition, but it is digested with no greater effort than roast meats. Meats boiled to a tasteless pulp are easily digested, but have little nutrition aside from their protein value. When boiling meat for the meat alone, plunge the meat into a generous supply of boiling water. Let it boil hard for ten minutes. This will coagulate the outer albumen and seal the pores of the surface of the meat. Then lower the temperature and let the meat cook slowly at a temperature of about 175 degrees until tender. The sealing of the outer pores will retain the juices and flavoring of the inner portions of the meat so it will be tender and juicy, rich in flavor and much more easily digested.

### SOUPS

If a rich soup is desired begin boiling your meat in cold water. If you desire a rich flavor in your meat begin cooking in boiling water; this seals the pores and retains the rich flavor of the meat juices. Ten minutes is sufficient time to seal the pores, then the cooking should proceed more slowly so not to coagulate or render hard all the albumen. This will render your meat tender and juicy. In cooking meats for soup, when the water reaches a temperature of 165 degrees, the first dissolved albumen will rise in a brown skum and may be removed. The water becomes clear, as the heat increases the tissues of the meat are transformed into gelatin, part of this together with juices of the meat and a portion of the fat go to enrich the soup. Under this process the meat becomes tougher, more tasteless and less nutritious. It loses in weight from 40 to 45 per cent. Probably less than one-fourth of this loss is organic matter, the other three-fourths water.

The loss in the organic matter is made up from dissolved fats and tissues, and other ingredients such as gelatin, albumen, flavoring substances, muscle sugar, acids and mineral matter. It is impossible to get a nice rich, sweet, juicy, tender piece of meat and a rich broth from the same piece of meat. So we must cook for either one or the other.

### ROASTING, BROILING AND FRYING MEATS

Roasting, broiling or frying meats, if properly done, better preserves the natural flavor and juices of the meat than either boiling or stewing. There is less loss in weight and the principal decrease is water. There is a small shrinkage from dissolved fats and acids, also from nitrogen and carbon set free by heat. Extremely hot fire should be used only for small roasts. The heat coagulates the albumen, seals the outer pores and retains the flavors and juices and leaves the meat tender and juicy. The small roast will cook through under the hot fire before the outside burns. The same heat used for a large roast will char and burn the outside before the inner portion is cooked. Hence the larger the roast the slower the fire. Use the hot oven for the large roast for the first ten minutes until outer albumen is coagulated and pores sealed, then lower the temperature of the oven and allow the cooking to go on just to avoid burning the outside. If in a hurry, a hotter fire may be used by repeated basting.

Steaks are broiled on the same principal. Ten minutes or less is sufficient for broiling. The heat at first should be strong enough to sear the outside and close the pores. Continue the broiling only long enough to make the meat tender.

### FRIED MEAT

If you must fry your meat use the same principal, being careful not to over cook. Be sure to retain the juices and flavor by the hot frying pan to begin with so the surface may be seared and sealed. You can then lower the temperature just sufficient to avoid scorching. Rare or medium meats are most wholesome.

### MEAT STEW

In making a meat stew the meat should be cut into small pieces, put into cold water a little more than enough to cover it well, bring gradually to a temperature of about 175 degrees; let it cook slowly until tender. The meat will be found rich in juices and flavor and the broth most excellent. This may be thickened to suit the individual taste.

### MEAT EXTRACTS

Meat extracts if pure have neither gelatin, fat nor albumen. Their ingredients are flavoring matter from the meat, some dissolved mineral salts. It is not a food but a stimulant, the same as tea and coffee. This should be given to the sick only on medical advice, on account of the danger of reaction.

The above does not apply to the ordinary beef tea and broth made in the home from meats. These contain small amounts of albumen, gelatin, protein and fats. They have a real food or nutrition value, as well as being a light stimulant. The percentage of water is very large, from 95 to 98 per cent. We leave advice as to all so-called predigested meats and food in the hands of your physician. Two to three ounces of meat per day cooked in any manner should be the limit for any man, even though a meat eater. Most people should eat much less than this, many none at all. A light meat diet is commendable for all. To some systems meat is a rank poison. Study the needs of your own systems with the aid of your physician, if necessary, by monthly tests with and without meat. Then supply the demand according to your real needs. Don't trust to the gnawing of appetite. That is in the stomach and may be to you as great a curse as the appetite for strong drinks in the drunkard. If you have been a heavy meat eater you may be sure you will miss the stimulant, just as much as the drunkard misses his morning drink. Let judgment assert its right. Let will power take the throne. Do what you know to be right regardless of appetite. One month's test will make you master. Then be governed by your own best interests as to the use or non-use of meats. Let the same tests govern all your selection and use foods both as to kind and quantity and you will be a new person in feeling, in thought, in action, in morals, in piety and especially in your home life.

# MEDICINAL PROPERTIES OF FOODS

The medicinal properties of food is better understood by the brute than by man with all his intellect, reason, science and his boasted civilization. In this we are speaking of the masses and not of the professionals and specialists. When the beast is ill it seeks a medicinal food and absolutely refuses to eat all other food until relief comes. Man has so far neglected the study of foods that he not only eats when he is ill, but really forces food on his most precious loved ones', by his persistent entreaty and pleading, thinking that in so doing he will relieve their illness. Nature's storehouse is filled with medical foods. The preservation and development of the body demands that we shall become familiar with the medical properties of food so that we may know not only the demands of the body for foods for the repair of the waste and broken down cells and tissues, and for the generation of new cells for body building. So that we may not only know what foods are necessary to furnish the mineral salts of the body for supplying the necessary iron to purify the blood, and the mineral matter to rebuild the broken down bone cells, and that we may know what foods are necessary to generate the heat and energy, to carry on the bodily functions, maintain the heat of the body and perform its daily task, but that we may know the medicinal properties of our food supply, so that we may go to Nature's own laboratory and find medicine in foods.

## DRUGS AND PHYSICIANS

We do not mean by this that there are not times when we have absolute need of both drugs and a physician. Ofttimes these are our best friends and they are ofttimes the only agencies that can restore the body because of our abuse of the same, through ignorance, neglect and willful abuse. Under the New Health Conscience the work of the physician will be the selection of our food supply, rather than the selection of our drug supply.

### SELECTION OF MEDICINAL FOODS

It is just as necessary for the layman to understand the selection of foods from a medical standpoint, as it is for him to understand the distinction between wholesome foods and poisonous foods. There are times when the most wholesome foods become poison to our system. There are times when food means life. There are times when food means death. There are times when food means health. There are times when food means disease. There are times when a slice of chicken or a piece of pie is as deadly poison to the body as a dose of strychnine. Many a life has been sacrificed when the closest bosom friend has clandestinely furnished their loved one a coveted morsel of food against the advice of the physician.

The alarming increase of many malignant diseases in the face of all the advances of medical science today is due very largely to our ignorance in the selection of medical foods. Indigestion and malnutrition are becoming a national calamity, because of decreased efficiency in the individual. The principal cause is over-eating, imperfect mastication and wrong combinations of food, and the lack of knowledge of our medicinal properties in our various foods.

The lack of knowledge of the medicinal properties of the various articles of our food supply is the cause of indigestion, constipation, dyspepsia, nervous disorders, gout, rheumatism, liver diseases, diabetes, Bright's disease, heart disease and ofttimes cancer and appendicitis. The proper selection of our food supply on the basis of their medicinal properties will both prevent and cure these diseases. Man owes it to himself to obtain this knowledge.

### POWER OF MIND OVER DIGESTION AND ASSIMILATION

Man must not only know the medicinal properties of the food he consumes and the food he should select when he has the above named diseases, but he must know the power of the mind over the digestion and assimilation of the food supply. Man may select his food with scientific accuracy from the medicinal standpoint, he may have the exact combination and the proper quantity, and may thoroughly masticate his food, but if he has a wrong attitude of mind his food may become poison in the stomach.

Anger, malice, hatred, jealousy, fear and excessive grief may transform the most wholesome food into the rankest poison in the stomach and the intestines. A sulking sour disposition will create a sour dyspeptic stomach. Dr. F. B. Cherington said to me in our class in the theological school a quarter of a century ago, "The time will come when it will be as great a disgrace for a man to have the dyspepsia as it now is for a man to have the delirium tremens." That time is not far distant. The one is the product of wrong drinking, the other is the product of wrong eating. I leave with you the theological problem as to which is the greater sin. Both are the product of a debased and a depraved appetite. Appetite in both cases has caused wreck and ruin.

### GOOD CHEER AND DIGESTION

The dinner hour should be the most cheerful of the day. Bedeck your table with flowers, wreath your face in smiles, fill your mind with the most cheerful thoughts for the dinner hour. Never discuss digestion, disease, or death at the dinner table. Banish forever from your dinner table the discussion of business, worry, health, food and diet. The selection of your food, the combination and the quantity should be settled before, and become second nature. Then the selection at the table needs no discussion in your own mind. The increasing custom of business men in making dinner engagements to discuss important business matters of grave import is little less than suicidal. Better far to have no dinner than to eat under such circumstances. The New Health Conscience demands a revolution in diet and dinner customs.

## INDIGESTION

Indigestion is one of the danger signals of improper diet. The proper selection of foods as to quality and quantity, and combinations has far more to do with health than the skillful administration of medicines, although I am a firm believer in medicine and physicians. A good Christian physician is one of God's noblemen and the best family friend. Like the hospital and the undertaker, you must keep away from him as long as you can. When you need any one of the trio, their services is absolutely indispensable and imperative. Foods scientifically selected and judiciously eaten is man's best medicine. Foods are medicine under scientific selection and judicious administration. They become poisonous under improper selection and maladministration.

## HEALTH IS NORMAL

Man's body was created for health. The abnormal care of the body, the improper selection of food, the injudicious eating of the same is the cause of disease. Food is medicine when the general condition of the body is normal, and the selection and quantity and combination is correct. The digestion of our food supply depends largely on the proper flow of the digestive juices. The first essential in good digestion is thorough mastication, so that the food may be well mixed with the saliva. The gastric juices are absolutely essential to good digestion, assimilation and nutrition. The individual who has a poor appetite or slow digestion needs medical foods that will cause a larger flow of the gastric juices.

## APPETITE

Appetite is man's best friend or his worst enemy. A normal appetite will select the time of eating and the necessary quantity. A depraved appetite will wreck nerve, and muscle, body and brain, with an abnormal food supply that poisons the whole system. The beast of the field with only instinct to direct it in the selection of food is far better nourished than man, with all his intellect, reason, science and boasted civilization. The depraved appetite wrecks the body and brain by its abnormal demands for foods, coffee, tobacco, opium and liquor. The depraved appetite is not past redemption until the will is absolutely dethroned. As long as you can change your mind you can change your taste. Medicinal foods and the will power can correct not only a depraved appetite, but a dyspeptic stomach as well. An insufficient flow of the gastric juices will cause not only a lack of appetite, but also a lack of real hunger when the body really demands food for its nourishment, the result is malnutrition, this means disease. He who understands the selection of foods and their medicinal properties, and has become familiar with the amount of food necessary to generate the heat and energy necessary to sustain the bodily functions and maintain the heat of the body, who understands the wholesome combination of foods and is familiar with the poisons generated by the wrong combinations, may so select the articles of food constituting his menu that his food will be thoroughly digested and assimilated, and his body will find perfect nutrition from the food supply. The blood stream will carry to every cell along the thousand miles of its tortuous course, the necessary elements of nutrition for the development of tissues, muscle, nerve, bone and brain. The whole man will be well nourished. Your food will be your medicine and disease will be impossible.

## FOODS AND THEIR MEDICINAL VALUES

Nature has provided a generous laboratory in which she has stored her medicinal food supply. In fact, all foods are medicinal. The human body is the greatest automatic repair machine in the world. Give it normal care and it will become absolutely self repairing for from fifty to a hundred years. Normal care of the body means the thorough cleansing of the skin, by the friction bath, the air bath, the sun bath, the sweat bath, the hot and cold water baths: it means perfect elimination by all the eliminating organs of the body, the skin, the lungs, the intestines, the liver, the kidneys: it means a full rich supply of pure air that will furnish the necessary oxygen to feed the cell life and purify the blood: it means proper exercise for every nerve, muscle and organ of the body so that they may perform their natural functions; more than this, it means the proper selection of the food supply, the quantity necessary to nourish and sustain the body without poisoning it by an abnormal supply, it means the perfect nutrition of the body from a well-balanced ration that will furnish the medicinal properties by which the body may become automatic in its preservation and repair. We will present here a classification of foods with a general outline of their medicinal values. This classification is made on the basis of food values and analysis as presented by our best scientific experts in the study of dietetics. This study will be found invaluable.

## MEDICINAL VALUE OF FOODS FROM A LAYMAN'S STANDPOINT

Hunger and digestion are among the first essentials of good health. Hunger and appetite are not synonomous terms. Hunger is man's greatest friend. Appetite is his greatest enemy. The first essential of good digestion is a normal flow of saliva and gastric juices. Our food supply cannot be digested without these juices. The following foods aid the flow of these digestive juices and thus aid digestion and assimilation.

## FOODS INCREASING THE FLOW OF GASTRIC JUICES AND SALIVA

1. *Saliva-increasing Foods.* Hygienic toast (very hard), shredded wheat biscuits, grapenuts, zwieback, parched corn, all to be eaten dry and thoroughly masticated. Use but one of these foods at a meal.

2. *Gastric Juices.* The fruit juices are among the most wholesome foods for stimulating the flow of gastric juices. Many of the fruit juices not only stimulate the flow of the gastric juices, but they are powerful germicides, they are rich in nutrition and possess wonderful medicinal pro-

perties. The fruit juices are composed of pure distilled water and fruit sugar. These fruit juices are so pure that they can pass directly into the blood stream without transformation by any of the digestive juices. The most wholesome of the fruit juices for increasing the flow of the gastric juices and aiding digestion are apple juice, pineapple juice, lemon juice, grapefruit juice, grape juice, blackberry juice, raspberry juice and peach and plum juices, strawberry and cherry juices. Orange juice is also very wholesome, but contains too much sugar for some stomachs. All these juices must be used unsweetened when used for medicinal effects.

3. *Foods Rich in Sugar.* The foods rich in sugar stimulate the flow of the gastric juices. Dried figs, dates, raisins, prunes and peaches.

4. *Vegetable Juice.* Soups rich in the natural juices of tomato, celery, corn, onions and potatoes. Also spinach, peas, carrots and asparagus.

## CONSTIPATING FOODS

There are many foods that retard the flow of the gastric juices. A superabundance of gastric juices causes sour stomach, water-brash, hyper-acidity and heart burn. There are two special acids in the gastric juices. The hydrochloric acid, which is secreted from the walls of the stomach, and the lactic acid which is generated by fermentation germs of the food supply. Five to eight quarts of gastric juices is a normal supply for twenty-four hours. Ten to twelve quarts have been known to be generated under abnormal conditions. This overproduction causes acid dyspepsia. Gastric ulcers may be produced by an abnormal amount of hydrochloric acid. The following medicinal foods will check the abnormal flow of gastric juices and improve digestion and assimilation.

## FOODS DIMINISHING GASTRIC JUICE

1. *Animal Fats.* Fat meats, butter, cheese, cream, boiled milk and white of eggs.

2. *Vegetable Fats.* Cottolene, olive oils, salad oils, ripe olives, pecan nuts, Brazil nuts, peanuts, walnuts are laxative foods and not constipating.

3. *Pure Starches.* Corn starch, fine white flour, white bread, rice and gluten mush are constipating foods.

4. *Protein Foods.* Lean meats, eggs, baked beans, peanut butter and lentils.

## LAXATIVE FOODS

The laxative foods are among the most important of our food supply. No diet is either complete of wholesome without the laxative foods. Health depends on the proper function of the eliminating organs. Clog the eliminating organs of the body and the whole man is sick. A whole train of diseases follow in the wake of a lack of the laxative foods. Rheumatism, liver troubles, kidney diseases, heart disease, indigestion, constipation, gout, lumbago and sciatica are all products of our failure to provide a sufficient quantity of the laxative foods. This failure causes the generation of poisonous gases in the digestive tract and these poisonous gases are carried to all portions of the body; they produce fatigue and brain fag and render the individual incompetent for his best efforts in manual labor, study or business. Normal health demands a generous supply of the laxative foods in proportion to the regular food supply. Following are some of the best laxatives. Neither the pill box nor the bottle can atone for the failure to provide a generous supply of the laxative foods in our dietary.

## LAXATIVE FOODS

1. *Mineral Salts.* Celery, lettuce, raw cabbage, raw spinach, watercress, green onions, raw tomatoes, parsley and carrots.

2. *Fruits.* All acid fruits—grapefruit, lemons, limes and oranges. Apples, peaches, cherries, currants, gooseberries, huckleberries, cranberries, pineapples, grapes, plums, prunes, figs, dates and raisins.

3. *Sugars and Sweets.* Sugars, honey, syrups, candies, jellies, jams.

4. *Fats.* Animal fats: Fat meats, butter and cream. Vegetable fats: Cottolene, olive oil, salad oil, ripe olives, pecan nuts, Brazil nuts, peanuts and walnuts.

5. *Cellulose Foods.* This includes fruits, cereals and many vegetables. All fruits above mentioned. Oatmeal mush, graham mush, green corn, cooked spinach, shelled green peas, asparagus, cauliflower, sweet potatoes, green lima beans, melons and cooked onions.

6. *Drinks.* Buttermilk, sour milk, lemonade without sugar, apple juice, grape juice, orange juice and pineapple juice, all unsweetened.

### BLOOD BUILDING FOODS

"The blood is the life." "Where there is pure blood there can be no disease." The blood stream of the body is said to be a thousand miles in length. Each heart throb of the average person is said to send six ounces of blood coursing through this blood stream of a thousand miles. Sixty-six heart throbs will force the entire blood supply of the body, 25 pounds coursing through the full length of this blood stream. The health of the body depends on the purity of this blood stream. The purity of the blood stream depends upon a generous supply of oxygen to purify the blood, and upon the selection, quantity and combination of our food supply. The anaemic conditions of the blood and the emaciation of the body are the result of impoverished blood. Blood is generated daily from our food supply. Every cell of every organ of the body must feed from the foods carried to them through the blood stream. This service is purely al a carte. Tissue cells must feed on tissue forming foods.

Nerve cells must feed from nerve building foods. Muscle cells must feed from muscle building foods. Bone cells must feed from bone building foods. Brain cells must feed from brain building foods. Digestion and assimilation carries the food to the blood stream through the more than 10,000,000 suction pumps of the intestines, and it is distributed to every cell of the body through the blood stream.

## BLOOD BUILDING FOODS

The following foods are rich in the chemical elements necessary to develop a generous supply of rich red blood, which is the key to health.

1. *Iron.* We get iron for our blood supply from spinach, raw and cooked, tomatoes, watercress, strawberries, cranberries and lentals.

2. *Mineral Salts.* We get mineral salts for the blood from raw cabbage, raw tomatoes, celery, lettuce, onions, radishes and raw fruits.

3. *Carbohydrates.* We get carbohydrates for enriching the blood supply feeding the cell life, and generating heat and energy, from the cereals, the fruits and the vegetables, also the nuts.

4. *Proteins.* Proteins for enriching the blood supply are secured from the meats, peas, beans, cheese, eggs, fish and the various nuts.

5. *Fats.* We get the fats for enriching the blood supply from fat meats, butter, olive oils, ripe olives, salad oils, cottolene and nuts. These chemical compositions of our food supply are the blood builders of our bodies. They make possible a generous supply of rich blood.

6. *Oxygen.* Any or all the above chemical elements of food supply are powerless to generate a generous supply of rich red blood until they form a union in the cell life with a generous supply of oxygen carried to the cells of the body by the red blood corpuscles of the blood stream. The food

of the body is powerless to generate heat or energy until it is met in the cell by the oxygen, then combustion or oxidation takes place in the cell generating heat and energy, just as the combustion of the gasoline in the cylinders of our automobiles generate heat and energy necessary to furnish our driving power. Deep breathing and the development of a full lung capacity of from 250 to 350 cubic inches is an absolute essential for a generous supply of rich blood. It is well declared "The blood is the life."

## CATARRHAL FOODS

Catarrh is one of the most prevalent diseases against which we have to contend. It is also one of our most dangerous diseases. It affects the nasal passages, the eyes, the hearing, the throat, the lungs, the bronchial tubes, the stomach and the intestines. Our food supply probably has a greater effect on this disease than almost any other. Certain foods are absolutely "Forbidden fruit" in cases of catarrh. The following foods belong to this class and must not be eaten in cases of catarrh:

1. *Prohibitive Foods in Catarrh.* All dairy products. Butter, milk, cheese and all foods especially rich in fats. A light diet is commendable. Salt must be practically eliminated from the diet in catarrh. Meats should not be eaten in cases of catarrh of the stomach and intestines. Vinegar and all highly seasoned foods are also prohibited.

2. *Medicinal Foods for Catarrh.* All foods that cause a copious flow of the gastric juices of the stomach, and all foods causing an additional flow of saliva are wholesome in cases of catarrh, viz: Dried figs, peaches, raisins, dates; apples, cherries, blackberries, raspberries, strawberries, plums and currants, pears and pomegranates.

*Saliva-producing Foods.* Grapenuts, shredded wheat biscuits, zweiback, hygienic toast, baked potatoes, parched corn and hygienic crackers.

3. *Drinks for Catarrh.* Lemonade, limeade, apple juice, grape juice, pineapple juice and buttermilk. All to be taken without sugar. The following fruit juices are also wholesome in cases of catarrh: Orange juice, grapefruit juice, currant juice, gooseberry juice.

4. *Nuts.* Nuts should take the place of meats and dairy products for catarrh.

### DYSPEPSIA FOODS

Acid dyspepsia is caused by an abnormal flow of the gastric juices.

The following foods will be found wholesome in cases of dyspepsia:

1. *Hygienic toast.* Zweiback, shredded wheat biscuits and hygienic crackers.

2. *Eggs.* English walnuts, Brazil nuts, pecans, peanuts, lean meat, cottage cheese, fruit ices, ice cream, frozen peaches and frozen strawberries.

3. *Fats, Animal and Vegetable.* Butter, cream, milk, olive oil, salad oil, ripe olives, nuts and oat meal mush and malted honey.

4. *Foods for Ulcered Stomach.* Raw eggs and milk, mutton broth, rice, gluten mush, chicken soup, buttermilk, egg-nog and pineapple juice.

### DIABETIC FOODS

Diabetes is one of the imminent perils of the race under twentieth century life. Bright's disease and diabetes have increased more than 500 per cent in the last fifty years. One American authority estimates that diabetes has increased more than 1500 per cent in the last fifty years. Dr. Gilfoy, chief of the Health Department of New York city, declares that heart disease and diabetes has increased more than 100 per cent in fatalities in the last thirty years, in the face of all the advance in medical science. Dr. William S. Sadler of Chicago declares that statistics show that insanity, epilepsy and idiocy have increased 100 per cent in the last fifty years, and some estimates place the increase as high as 300 per cent in the same time. Scientists are rapidly blotting out the epidemics of yellow fever, diphtheria, typhoid fever, smallpox, scarlet fever and all germ diseases. Even Bubonic plague is rapidly becoming a thing of the past, under modern methods of prevention.

### BLOOD POISONING

We are facing another grave problem that gives us cause for serious alarm. The phenomenal increase in diseases due to food poisoning is appalling. The increase of from 100 to 300, and even 500 per cent in heart diseases, kidney diseases and insanity is simply appalling. Then when a noted scientist declares that there has been an increase in diabetes in the past fifty years of 1500 per cent we are dumb with silence. We know that these diseases are caused by improper diet, wrong selections of food, wrong quantities and wrong combinations. We know that diabetes which is striking down its hundreds of thousands is the product of improper diet. We know that it is possible to select foods that will prevent, and foods that will cure this disease, and many kindred diseases, if they are but taken in time. Well may we declare that this subject of diabetic foods is one of the most vital problems for the American people in the twentieth century. The proper selection of foods as to kind, quantity, and combination, together with a normal amount of pure oxygen, hygienic bathing, and scientific exercises, will make the body armor clad against the assaults of this insidious foe. This knowledge must not only be in the hand of the medical expert and the scientist, but it must be placed in the hands of the laymen. This knowledge must be in the hands of the student in our high schools and colleges. It must be placed in the hands of the toilers, the artisans and the manufacturers, the professional classes, and the capitalists, as well. This insidious foe is no respecter of persons. It strikes down the toiler at his task, the professor in his class room, the lawyer at the bar, the judge on the bench, the minister in his pulpit, the banker in his office, the capitalist in his palace. The man of sedentary life is usually his earliest victim. The problem of the stomach, the problem of the intestines, the problem of the liver, the problem of the kidneys, the problem of the heart, are all the problems of our food supply, our breathing, our bathing and our exercise. These are especially the problems of the diabetic patient.

### THE DIABETIC FOODS

1. *Forbidden Foods.* Practically all starches and sugars, sweet fruits, jellies, jams, pastries, candies, syrups, and sweet drinks, are forbidden.

2. *Carbohydrates Permitted.* Gluten bread, gluten biscuits, or gluten crackers. Hygienic toast permitted when these are impossible. The alkali of the potato permits a small amount of baked potato. Most of the vegetables in small amounts—cooked spinach and other greens.

3. *Fats.* Butter, olive oil, salad oil, ripe olives, all in limited amounts.

4. *Proteins.* Eggs, cottage cheese, English walnuts, chestnuts roasted, pecans, chicken occasionally, chicken broths.

5. *Fruits.* Apples, plums (acid), strawberries—no sugar, cranberries, grapefruit. Only acid fruits can be eaten, eliminate all sweet fruit.

6. *Drinks.* Apple juice, grape juice, lemon juice—no sugar, pineapple juice—no sugar, buttermilk, and water. Breathe deeply to furnish a rich supply of oxygen to consume the sugars and starches.

### FATTENING FOODS

In studying the fattening foods we must bear in mind that there are those who by birth belong to the rank and file of the lean brigade. These individuals will never become corpulent any more than the corpulent man will take his place in the rank and file of the lean brigade. A proper observance of the laws of health along the lines of diet, exercise, breathing and bathing, will bring each to their normal family tree. Fattening foods will bring the lean person up to his normal family tree. More than this it will bring them into normal health, and give them strength and vigor for their work. The change of diet may reduce the weight for the first few days or even weeks, but persistent use of fattening foods as presented in the following dietary will build up the whole system and increase the weight, and improve the health. The stomach must not be overloaded so as to break down digestion and assimilation. Follow the menus for flesh building.

### FLESH BUILDING FOODS

1. *Fattening Foods—Mineral Salts.* Celery, lettuce, raw cabbage, raw tomatoes, green onions, raw spinach, raw carrots occasionally, grated.

2. *Raw Fruits.* Apples, oranges, peaches, pears, sweet plums, prunes and figs.

3. *Dried Fruits.* Figs, raisins, dates, raspberries, prunes and peaches.

4. *Fats.* Fat meats, butter, olive oil, ripe olives, salad oils, cream.

5. *Carbohydrates—Sugars and starches.* Sugar, honey, syrups, jellies, jams, cake, whole wheat bread, graham bread, corn bread, hygienic toast.

6. *Nuts.* Walnuts, pecan nuts, Brazil nuts, chestnuts —baked, hickory nuts.

7. *Cereals.* Oatmeal mush with butter or cream, graham mush, graham gems.

8. *Miscellaneous.* Eggs, cheese, milk, buttered beets, cream soups.

9. *Proteins.* Roast leg of lamb, roast leg of mutton, Hamburg roll, porterhouse steak, chicken, turkey, quail, salmon, catfish, trout, sea bass, albacore.

10. *Vegetables.* Cooked tomatoes, baked potatoes, mashed potatoes, sweet potatoes, shelled lima beans with butter, green peas, baked beans, cabbage, cantaloupes, casabas, and all foods easy of digestion and assimilation. This is the field of selection. You must eliminate foods that are prohibited because of special diseases and select from this list a well balanced ration of the foods that best agree with you. Be sure you have sufficient protein for body building and the repair of waste cells and tissues. Do not run much above the ordinary low standard food supply. You may drink lemonade, sweet milk, half milk and half cream, and a generous supply of pure fresh water. Be cheerful, optimistic, pleasant.

### FOODS IN RHEUMATISM

Rheumatism is a filth disease. It is the product of accumulated poisons in the body that should have been eliminated through the natural eliminating organs, the lungs, the stomach and intestines, the skin, the liver and the kidneys. Lack of breathing, bathing, exercise, and proper diet are the prime causes of rheumatism. "Thou shalt not" is the word of the hour in dealing with the subject of diet in rheumatism.

*The Forbidden Foods.* The following list of foods are the forbidden fruit in rheumatism, lumbago, gout, and sciatica: Vinegar, salt, acid fruits, except the citrus fruits, meat, cheese, beans, starches, pastries, all highly seasoned foods, spices and peppers, oranges unless very sweet.

*Food for Rheumatism.* Rich foods must be eliminated from the diet. Tea and coffee are not permissible. Chicken may be used occasionally.

1. *Fruits.* Only the sweet fruits are permissible, except the citrus fruits. Lemon juice unsweetened, grape-

fruit, lime juice, apple juice, grape juice, cranberry juice. Fruit juices must be used unsweetened.

2. *Breads.* Hygienic toast, zweiback, hygienic crackers, baked potatoes, parched corn, browned rice, toast rye bread.

3. *Proteins.* Eggs, cottage cheese, pecans, almonds, walnuts, Brazil nuts.

4. *Drinks.* Lemonade—no sugar, buttermilk, some sweet milk. Boil the milk and drink it hot.

5. *Hot Baths* are especially helpful in rheumatism. Make the water as hot as the flesh can endure and remain in the bath some time. The cabinet sweat bath is very beneficial in rheumatism. It is very essential that the food supply shall be cut to the minimum, and that the foods prohibited shall be absolutely eliminated from the diet.

Select a very light menu from the above permissible foods. Fasting is better than feasting for rheumatism.

Exercise, sunshine and fresh air and an abundant supply of oxygen to purify the blood are prime necessities. Hot lemonade on retiring is most excellent; no sugar. Sulphur water bathing is excellent.

### FAT REDUCING FOODS

Omit all foods rich in sugar and starches, and all foods rich in fats.

Reduce the food supply to a minimum, using but three articles at a meal.

Drink lemonade—no sugar, buttermilk, and water. No drink at meals.

Omit all fresh and hot breads, pies, pastries, cakes, jellies and jams.

Use hygienic toast, very dry; zweiback, hygienic crackers, and gluten bread.

Use acid fruits—apples, grapefruit, cranberries, lemons, currants.

Use gluten bread, gluten biscuit, gluten crackers, cooked tomatoes.

Use raw celery, lettuce, raw cabbage, raw spinach, green onions.

Vegetables—Green peas, cabbage, cauliflower, tomatoes, and rice.

See Obesity for fuller instruction. Menus prepared.

# SAMPLE MENUS

*"We may live without poetry, music, or art:*
*We may live without science, and live without art:*
*We may live without friends: we may live without books:*
*But civilized man cannot live without cooks."*
—OWEN MEREDITH, *Lucile, Book I, Canto II.*

These sample menus are presented as a guide for the daily meals. They are not claimed to be scientifically accurate, but are sufficiently accurate for all practical purposes. They present a well balanced ration and will furnish normal nutrition for the body, so that the whole body will be properly nourished. They are based on the no-breakfast plan. No individual can eat three meals per day and continue healthful through life. The ever-increasing powers of appetite will inevitably overcome the demands of hunger, and ere we are aware we are consuming an abnormal amount of food, which must eventually prostrate the natural functions of the body.

This abnormal supply of food paralyzes the eliminating organs of the body and they cease to perform their functions. The stomach, the intestines, the liver, the kidneys, the skin, and the lungs all are overworked. Digestion, assimilation, and nutrition become abnormal. Poisons accumulate in the body. Food is neither digested nor assimilated, but decays and rots in the stomach and the intestines. This generates poisonous gases which are taken up into the circulation and carried to all parts of the body. The cells along the thousand miles of the blood stream are poisoned. The liver pours its poisons back into the blood stream instead of eliminating them through the gall bladder and the bile duct. The kidneys fail to eliminate the poisonous uric acid. The whole fifteen miles of capillary sewage in these small organs becomes clogged and they pour their deadly uric acid back into the circulation of the blood instead of eliminating it through the natural channels. This poisons the whole system and produces gout, rheumatism, diabetes, and Bright's disease, with many lesser ills.

The thirty miles of sewage emptying on the surface of the skin becomes clogged, the more than 3,000,000 pores or breathing, miniature lungs of the skin are stopped up. These should breathe in oxygen and eliminate carbonic acid gas and other poisons. These poisons are sealed in the body and with the failure of the lungs to eliminate properly the carbonic acid gas, produces a general slow poisoning of the whole body.

### POISONOUS GASES

The poisonous gases generated in the stomach and intestines by an abnormal food supply and carried throughout the whole body by the circulation of the blood, brings a slow poison to every cell of tissue, nerve, muscle, bone and brain of the whole body. This is one of the most potent causes of disease. We eliminate the dangers of over-eating by having two well selected meals per day. We select a well balanced ration from the mineral salts, or raw vegetable and fruit products; we select our protein for the repair of the worn-out cells and tissues of the body, and for body building in new cells, from the meat, the peas, the eggs, beans, cheese, nuts, fish, and meats. We select the carbohydrates which furnish the heat and energy from the cereals, the vegetables, and the fruits. These are called the kindling-wood of the body, because the starches and sugars generate a quick supply of heat and energy, while the fats produce the intense heat like the coal in the fuel supply of the commercial world. All of these elements are taken into consideration in the preparation of these menus. Their selection is based on the scientific principles of our best food experts. My compilations are based on the food tables prepared by the United States Department of Agriculture, through their Experiment Stations. In most cases I have used their tables in computation of food values. The menus are for a whole day, luncheon at 12 m, dinner at 6 p. m.

### LOW STANDARD BALANCED RATION

I present the following "Universal Breakfast" for adults, which with the luncheon at 12 m, and the dinner at 6 p. m. will furnish a perfect daily balanced ration for the classes for which they are prepared. I present a few sample menus, which may be easily varied by selecting foods similar in kind, and of the same fuel value. This may be ascertained by consulting the special menu calorie tables. Believing that the decision, as to whether the school children should adopt the no-breakfast plan or not, should rest with the parents. I present the "Universal Breakfast" for adults. My own judgment is that most children, and especially students in our high schools and colleges, are far better by the use of the "Universal Breakfast" than by the use of any other.

### THE UNIVERSAL BREAKFAST MENU

One universal smile on awakening.
One stretch, toes to top-knot.
One friction bath.
Thirty deep breaths.
Ten minutes health culture exercise.
Five minutes hot and cold bath.
Two minutes exercise with tooth brush.
One smile that won't come off.

Persons beginning the no-breakfast plan will find a little difficulty the first two or three days. We can accustom ourselves to five meals per day, then if we miss one of these we feel the same discomfort as when we omit the breakfast. Nature will soon adjust herself to the change. Then there will come a revolution in your physical condition. You will feel like a new person. There will come into your life a new vigor, and new energies will continually break in upon you. If you are a little faint about 10 o'clock, squeeze the juice of half a lemon in a glass of water and sip this occasionally. Use no sugar.

### DINNER PAIL LUNCHEON MENUS CLASSIFIED

**Menu No. 1—Dinner Pail Luncheon, Children Six to Nine Years Old.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Ripe banana | 1 Medium | 5 | 4 | 2 | 84 | 90 | 3.3 |
| Whole wheat bread | 1 Slice | 1 | 8 | 1 | 63 | 72 | 3.3 |
| Hygienic toast | 1 Slice | 1 | 12 | 14 | 94 | 120 | 2.5 |
| Butter, fresh | ½ Cub. inch | ⅓ | 1 | 75 | 00 | 76 | 3.3 |
| Rice custard | 3 Table S. | 3 | 22 | 4 | 68 | 94 | 2.5 |
| Prunes, dried stew | 2 T. S. | 2 | 0 | 1 | 53 | 54 | 2.0 |
| Almonds | 5 Nuts | ½ | 22 | 55 | 18 | 95 | 2.7 |
| Olives, ripe | 5 Olives | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Totals | | | 73 | 201 | 388 | 662 | |
| **Menu No. 2—Dinner Pail Luncheon, Children Six to Nine Years Old.** | | | | | | | |
| Celery | 2 Stalks | 2 | 0 | 8 | 11 | 19 | 3.5 |
| White bread | 2 Slices | 2 | 26 | 4 | 128 | 158 | 3.2 |
| Butter, fresh | ½ Cub. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Maple syrup & sugar | 1 T. S. | 1 | 0 | 00 | 85 | 85 | 1.5 |
| Boiled egg | 1 Egg | 2 | 48 | 45 | 3 | 96 | 3.0 |
| Oatmeal crackers | 2 Crackers | 1 | 16 | 14 | 93 | 123 | 3.3 |
| Figs, dried, stewed | 3 Small | 1 | 4 | 4 | 85 | 93 | 3.0 |
| Totals | | | 95 | 150 | 405 | 650 | |
| **Menu No. 3—Dinner Pail Luncheon, Children Nine to Thirteen Years Old.** | | | | | | | |
| Apple | 1 Medium | 4 | 3 | 4 | 100 | 107 | 3.5 |
| Bread, whole wheat | 2 Silces, thin | 2 | 16 | 2 | 126 | 144 | 3.3 |
| Hygienic toast | 1 Slice | 1 | 12 | 14 | 94 | 120 | 2.5 |
| Butter | ½ Cub. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Olives, ripe | 5 Olives | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Cottage cheese | 2 T. S. | 2 | 50 | 3 | 10 | 63 | 3.0 |
| Dates | 8 Dates | 2 | 4 | 6 | 170 | 180 | 3.0 |
| Totals | | | 90 | 153 | 508 | 751 | |

**Menu No. 4—Dinner Pail Luncheon, Children Nine to Thirteen Years Old.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Baked apple | 1 Medium | 3 | 1 | 1 | 78 | 80 | 1.7 |
| Graham bread | 2 Slices, thin | 2 | 24 | 6 | 124 | 154 | 3.7 |
| Hygienic toast | 1 Slice | 1 | 12 | 14 | 94 | 120 | 2.5 |
| Butter | ½ Cu. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Peanuts, roasted | 10 Peanuts | 1 | 35 | 53 | 33 | 121 | 3.5 |
| Raisins | 1 T. S. | 1 | 3 | 4 | 93 | 100 | 2.5 |
| Cream cheese | 1 Cub. inch | ½ | 26 | 34 | 2 | 62 | 3.8 |
| Totals | | | 102 | 187 | 424 | 713 | |

**Menu No. 5—Dinner Pail Luncheon, Sedentary Individuals, High School and College Students. Women at very light work—Clerks—(Fourteen to Twenty).**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Baked apple | 1 Medium | 6 | 2 | 2 | 116 | 120 | 1.7 |
| Whole wheat bread | 2 Slices | 3 | 25 | 3 | 188 | 216 | 3.3 |
| Butter | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Egg | 1 Poached | 2 | 50 | 46 | 00 | 96 | 2.5 |
| Celery | 2 Stalks | 2 | 2 | 0 | 8 | 10 | 3.5 |
| Raisins | 2 T. S. | 1 | 3 | 4 | 93 | 100 | 3.5 |
| Glass of milk | 1 Glass | 5 | 28 | 32 | 40 | 100 | 2.4 |
| Totals | | | 111 | 162 | 445 | 718 | |

**Menu No. 6—Dinner Pail Luncheon, Sedentary Individual, High School and College Students, Fourteen to Twenty. Women at very light work and Clerks.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bananas, ripe | 1 Medium | 3 | 7 | 3 | 140 | 150 | 3.3 |
| Graham bread | 2 Thin slices | 2 | 24 | 6 | 124 | 154 | 3.7 |
| Lettuce | 2 Leaves | 1 | 2 | 0 | 4 | 6 | 2.5 |
| Butter | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Roast leg of lamb | 2 Slices | 2 | 67 | 46 | 00 | 113 | 3.0 |
| Rice custard | 3 T. S. | 3 | 22 | 4 | 68 | 94 | 2.5 |
| Dried prunes, stewed | 2 T. S. | 2 | 0 | 1 | 53 | 54 | 2.0 |
| Oranges | 2 Medium | 8 | 7 | 1 | 112 | 120 | 1.5 |
| Totals | | | 130 | 136 | 501 | 767 | |

**Menu No. 7—Man at moderate work—Woman at heavy work—Rugged College Students—Clerks at moderately heavy work. (Dinner Pail Luncheon).**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Apple | 1 Medium | 6 | 3 | 5 | 100 | 108 | 3.5 |
| Graham bread | 2 Thin slices | 2 | 24 | 6 | 124 | 154 | 3.7 |
| Cream cheese | 2 Cub. inches | 1 | 51 | 67 | 4 | 122 | 3.3 |
| Rice custard | 4 T. S. | 4 | 30 | 6 | 91 | 127 | 2.5 |
| Prunes, stewed | 3 T. S. | 3 | 0 | 2 | 80 | 82 | 2.0 |
| Olives, ripe | 10 Olives | 2 | 8 | 98 | 16 | 122 | 3.0 |
| Oatmeal crackers | 2 Crackers | 1 | 16 | 14 | 93 | 123 | 3.3 |
| Butter, fresh | ½ Cub. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Totals | | | 133 | 273 | 508 | 914 | |

**Menu No. 8—Dinner Pail Luncheon. Man at moderate work—Woman at heavy work—Rugged College Students—Clerks at moderately heavy work.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Banana, ripe | 1 Large | 5 | 7 | 3 | 140 | 150 | 3.5 |
| White bread | 2 Thin slices | 2 | 26 | 3 | 128 | 157 | 3.2 |
| Butter | ½ Cub. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Roast beef | 2 Slices | 2 | 90 | 110 | 00 | 200 | 3.5 |
| Potato salad | 2 T. S. | 2 | 12 | 19 | 84 | 115 | 3.5 |
| English walnuts | 6 Nuts | 2 | 30 | 114 | 30 | 174 | 3.0 |
| Dates | 4 Dates | 1 | 2 | 3 | 85 | 90 | 3.0 |
| Totals | | | 168 | 327 | 467 | 962 | |

**Menu No. 9—Dinner Pail Luncheon. Individuals at heavy manual labor.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Raw tomatoes | 2 Small | 4 | 5 | 3 | 22 | 30 | 2.0 |
| Corn bread | 1 Sq. 3x3x2″ | 4 | 40 | 28 | 216 | 284 | 3.5 |
| Butter | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Roast lamb | 2 Slices | 2 | 67 | 46 | 00 | 113 | 3.0 |
| Rice custard | 3 T. S. | 3 | 20 | 4 | 68 | 92 | 2.5 |
| Prunes, dried, stewed | 3 T. S. | 3 | 1 | 1 | 81 | 83 | 2.0 |
| Olives, ripe | 10 Olives | 2 | 8 | 98 | 16 | 122 | 3.0 |
| Glass of milk | 1 Glass | 4 | 22 | 26 | 32 | 80 | 2.4 |
| Totals | | | 165 | 356 | 435 | 956 | |

**Menu No. 10—Dinner Pail Luncheon. Individuals at heavy manual labor.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Baked apple | 2 Medium | 6 | 3 | 3 | 174 | 180 | 1.7 |
| Sugar | 2 Teaspoons | ½ | 0 | 0 | 50 | 50 | 1.5 |
| Bread, graham | 3 Thin slices | 2 | 24 | 6 | 124 | 154 | 3.7 |
| Butter | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Boiled eggs | 2 Eggs | 4 | 96 | 90 | 6 | 192 | 3.0 |
| Baked beans | 2 T. S. | 2 | 18 | 6 | 50 | 74 | 3.7 |
| Ginger bread | 2 Inch cube | 2 | 16 | 25 | 167 | 208 | 3.0 |
| Peaches, cooked | 3 T. S. | 3 | 2 | 0 | 60 | 62 | 3.0 |
| Totals | | | 161 | 280 | 631 | 1072 | |

These Dinner Pail Luncheons can be varied from day to day, substituting from the Menu Calorie Table foods of about the same calorie value. When not feeling well eat a very light lunch or omit it entirely.

These luncheons are given on the basis of the no breakfast plan.

## FAMILY MENUS. LOW RATION. NO BREAKFAST PLAN

**Menu No. 11—Sedentary Individuals—Woman at light work—High School Students—Lady Clerks—Boys under twelve at rugged work.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Clam chowder | ½ Cup | 4 | 10 | 4 | 34 | 48 | 2.5 |
| Lettuce—Tomato Sal. | 3 T. S. | 3 | 35 | 5 | 40 | 80 | 2.5 |
| Whole wheat bread | 2 Thin slices | 2 | 16 | 2 | 126 | 144 | 3.3 |
| Butter | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Baked potato | 1 Small | 4 | 8 | 00 | 80 | 88 | 2.5 |
| Poached egg | 1 Egg | 2 | 50 | 46 | 00 | 96 | 2.5 |
| Prunes dried, cooked | 4 T. S. | 4 | 0 | 2 | 106 | 108 | 2.0 |
| Spinach greens | 3 T. S. | 3 | 12 | 22 | 14 | 48 | 3.0 |
| Pineapple, canned | 2 Slices | 4 | 2 | 3 | 144 | 149 | |
| Totals | | | 135 | 234 | 544 | 913 | |

**Menu No. 12—Dinner. Same class as above.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Banana-orange salad | 3 T. S. | 3 | 3 | 0 | 43 | 46 | 3.3 |
| Hygienic toast | 2 Thin Slices | 2 | 24 | 28 | 184 | 240 | 3.0 |
| Butter | ½ Cub. inch | ⅓ | 2 | 75 | 00 | 76 | 3.0 |
| Roast lamb | 2 Slices, med. | 2 | 66 | 45 | 00 | 111 | 3.0 |
| Green peas | 3 T. S. | 3 | 12 | 6 | 30 | 48 | 3.5 |
| Rice egg omelette | 2 T. S. | 2 | 16 | 12 | 36 | 62 | 2.5 |
| Brown gravy | 2 T. S. | 2 | 8 | 10 | 22 | 40 | 2.5 |
| Sweet potatoes baked | 1 Medium | 4 | 15 | 10 | 210 | 235 | 3.0 |
| Totals | | | 146 | 186 | 525 | 857 | |

**Menu No. 13—Luncheon.** Man at light work—Woman at moderate work—Gentlemen Clerks—Boys twelve to sixteen years old—College Students—Girls moderate.

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Letuce-tomato salad.. | 3 T. S. | 3 | 4 | 25 | 27 | 56 | 2.5 |
| Whole wheat bread.... | 2 Thin slices | 2 | 16 | 2 | 126 | 144 | 3.3 |
| Butter ........................ | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Tuna fish (Albacore) | 1 Pc. 2x3x½ | 2 | 60 | 12 | 00 | 72 | 3.5 |
| Mashed potatoes ........ | 3 T. S. | 3 | 10 | 12 | 64 | 86 | 3.0 |
| Green corn .................. | 3 T. S. | 3 | 12 | 3 | 75 | 90 | 3.7 |
| Cottage cheese .......... | 2 T. S. | 2 | 50 | 3 | 11 | 64 | 3.0 |
| Blackberry pie .......... | 1 Med. piece | 3 | 18 | 15 | 172 | 205 | 3.0 |
| Totals ............................................................ | | | 172 | 223 | 475 | 870 | |

**Menu No. 14—Dinner.** Same class as above.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cream of tomato soup | ½ Sup | 4 | 16 | 18 | 34 | 68 | 2.0 |
| Orange-banana salad | 1 T. S. | 3 | 4 | 0 | 64 | 68 | 2.5 |
| White bread.................. | 2 Slices | 2 | 26 | 3 | 129 | 157 | 3.2 |
| Butter .......................... | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Sweet potatoes baked | 1 Small | 3 | 10 | 6 | 140 | 156 | 3.5 |
| Rice egg omelette...... | 3 T. S. | 3 | 24 | 18 | 51 | 93 | 2.5 |
| Prunes, dried, stewed | 2 T. S. | 2 | 0 | 1 | 53 | 54 | 2.0 |
| Custard pie ................ | 1 Med. piece | 3 | 18 | 24 | 114 | 156 | |
| Totals ............................................................ | | | 100 | 205 | 585 | 904 | |

**Menu No. 15—Luncheon.** Man at moderate work—Woman at heavy work—Rugged College Students—Clerks at heavy work—Young Men at heavy work.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cream of pea soup...... | ½ Cup | 4 | 22 | 4 | 46 | 72 | 2.0 |
| Pineapple-banana sal. | 3 T. S. | 3 | 6 | 3 | 66 | 75 | 3.0 |
| Raisin bread ............... | 2 Slices | 3 | 30 | 7 | 200 | 237 | 3.5 |
| Butter .......................... | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Beans, lima .................. | 3 T. S. | 3 | 15 | 1 | 54 | 72 | 2.7 |
| Baked potatoes ......... | 1 Medium | 4 | 12 | 120 | 120 | 132 | 2.5 |
| Rice-egg omelette .... | 3. T. S. | 3 | 24 | 20 | 52 | 96 | 2.5 |
| Huckleberry pie ........ | 1 Piece Med. | 2 | 12 | 16 | 104 | 130 | 3.0 |
| Totals ............................................................ | | | 123 | 201 | 642 | 966 | |

**Menu No. 16—Dinner Class. Same as No. 15.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Clam chowder | ½ Cup | 4 | 10 | 4 | 34 | 48 | 2.5 |
| Cabbage-lettuce salad | 3 T. S. | 3 | 12 | 17 | 16 | 45 | 2.5 |
| Corn bread | 1 Piece 3x3x2 | 5 | 30 | 19 | 166 | 215 | 3.5 |
| Roast beef | 2 Slices | 2 | 90 | 110 | 00 | 200 | 3.5 |
| Baked potatoes | 1 Medium | 4 | 12 | 0 | 120 | 132 | 2.5 |
| Turnips | 3 T. S. | 3 | 3 | 10 | 20 | 33 | 4.5 |
| Brown gravy | 3 T. S. | 3 | 12 | 15 | 33 | 60 | 2.5 |
| Butter | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Stewed prunes, dried | 3 T. S. | 3 | 2 | 00 | 80 | 82 | 2.0 |
| Totals | | | 173 | 325 | 469 | 967 | |

**Menu No. 17—Luncheon. Men at very heavy work, demanding a large amount of heat and energy.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cream of onion soup | ½ Cup | 4 | 15 | 13 | 52 | 80 | 2.0 |
| Celery | 2 Stalks | 2 | 2 | 0 | 8 | 10 | 3.5 |
| Graham bread | 2 Thin slices | 2 | 22 | 6 | 124 | 152 | 3.7 |
| Butter | 1 Cub. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Roast beef | 2 Slices | 2 | 90 | 110 | 00 | 200 | 3.5 |
| Meat gravy | 2 T. S. | 2 | 8 | 10 | 22 | 40 | 2.5 |
| Tomatoes, stewed | 3 T. S. | 3 | 5 | 1 | 15 | 21 | 2.0 |
| Sweet potatoes, baked | 1 Small | 2 | 7 | 5 | 105 | 117 | 3.5 |
| Baked beans | 2 T. S. | 2 | 18 | 6 | 50 | 74 | 3.7 |
| Baked apple | 1 Medium | 4 | 2 | 2 | 116 | 120 | 1.7 |
| Totals | | | 170 | 304 | 492 | 966 | |

**Menu No. 18—Dinner. Men at very heavy work.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bean soup | ½ Cup | 4 | 18 | 7 | 51 | 76 | 2.0 |
| Banana-orange salad | 3 T. S. | 3 | 4 | 0 | 64 | 68 | 2.5 |
| Biscuits, soda | 2 Biscuits | 2 | 22 | 7 | 134 | 163 | 4.5 |
| Butter | 1 Cu. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Baked potato | 1 Medium | 4 | 12 | 100 | 120 | 132 | 2.5 |
| Brown gravy | 3 T. S. | 3 | 12 | 15 | 33 | 60 | 2.5 |
| Beans, lima | 3 T. S. | 3 | 15 | 1 | 54 | 70 | 2.7 |
| Pumpkin pie | 1 Piece Med. | 3 | 18 | 39 | 99 | 156 | 3.5 |
| Cream cheese | 2 Cu. inches | 1¼ | 64 | 83 | 5 | 152 | 3.8 |
| Olives, ripe | 5 Large | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Totals | | | 171 | 351 | 568 | 1090 | |

## LIGHT MENUS FOR PERSONS DESIRING NEITHER BREAD NOR MEAT.

**Menu No. 19—Luncheon.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Apple | 1 Medium | 6 | 3 | 4 | 100 | 107 | 3.5 |
| English walnuts | 6 Medium | 3 | 30 | 114 | 30 | 174 | 3.0 |
| Cottage cheese | 3 T. S. | 3 | 76 | 4 | 16 | 96 | 3.0 |
| Dates | 4 Dates | 1 | 2 | 3 | 85 | 90 | 2.0 |
| Olives, ripe | 5 Large | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Buttermilk | 1 Glass | 5 | 18 | 3 | 29 | 50 | 2.0 |
| Totals | | | 133 | 177 | 268 | 578 | |

**Menu No. 20—Luncheon.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cream of tomato soup | ½ Cup | 4 | 16 | 18 | 34 | 68 | 2.0 |
| Celery-lettuce salad | 2 T. S. | 2 | 13 | 7 | 10 | 30 | 2.5 |
| Baked potato | 1 Medium | 4 | 12 | 9 | 120 | 132 | 2.5 |
| Egg | 1 Soft boiled | 2 | 48 | 45 | 3 | 96 | 3.0 |
| Hygienic toast | 1 Slice | 1 | 12 | 13 | 94 | 119 | 2.5 |
| Creamed onions | 3 T. S. | 3 | 16 | 15 | 60 | 91 | 2.0 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Olives, ripe | 4 Olives | ⅘ | 3 | 40 | 6 | 49 | 3.0 |
| Totals | | | 120 | 214 | 327 | 661 | |

**Menu No. 21—Luncheon.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Grapefruit | ½ Medium | 4 | 3 | 0 | 48 | 51 | 1.5 |
| Almonds | 10 Nuts | 1 | 43 | 111 | 36 | 190 | 2.7 |
| Raisins, seeded | 1 T. S. | 1 | 3 | 4 | 93 | 100 | 2.5 |
| Rice-egg omelette | 3 T. S. | 3 | 24 | 18 | 51 | 93 | 2.5 |
| Prunes, dried, stewed | 2 T. S. | 2 | 0 | 1 | 53 | 54 | 2.0 |
| Glass milk | 1 Glass | 5 | 28 | 32 | 40 | 100 | 2.4 |
| Totals | | | 101 | 156 | 321 | 588 | |

**Menu No. 22—Dinner.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Cream of celery soup | ½ Cup | 4 | 14 | 18 | 32 | 64 | 2.5 |
| Hygienic toast, butter | 1 Slice | 1 | 13 | 41 | 94 | 148 | 2.5 |
| Boiled egg, soft | 1 Egg | 2 | 48 | 45 | 6 | 99 | 3.0 |
| Cream cheese | 1 Cu. inch | 1 | 51 | 67 | 4 | 122 | 3.8 |
| Apple-pineapple salad | 3 T. S. | 3 | 2 | 2 | 53 | 57 | 3.0 |
| Olives, ripe | 5 Olives | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Sweet potato, baked | 1 Small | 2 | 7 | 5 | 105 | 117 | 3.5 |
| Totals | | | 139 | 227 | 302 | 668 | |

**Menu No. 23—Luncheon.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tomatoes, sliced | 1 Sm. Sal. dr. | 3 | 6 | 10 | 25 | 41 | 2.0 |
| Lima beans (green) | 3 T. S. | 3 | 15 | 1 | 54 | 70 | 2.7 |
| Baked potato | 1 Small | 2 | 6 | 0 | 60 | 66 | 3.0 |
| Butter | ¼ Cu. inch | ⅙ | 0 | 38 | 00 | 38 | 3.0 |
| Rice custard | 3 T. S. | 3 | 22 | 4 | 68 | 94 | 2.5 |
| Cottage cheese | 2 T. S. | 2 | 50 | 4 | 6 | 60 | 3.0 |
| Peanuts | 1 T. S. | 1 | 46 | 70 | 44 | 160 | 3.5 |
| Pineapple, canned | 2 Thin slices | 4 | 2 | 2 | 144 | 148 | 2.0 |
| Totals | | | 147 | 129 | 401 | 677 | |

**Menu No. 24—Dinner.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Apricots | 3 Medium | 3 | 22 | 3 | 216 | 241 | 2.5 |
| Walnuts, English | 3 Nuts | 1 | 15 | 57 | 15 | 87 | 3.5 |
| Egg, poached | 1 Egg | 2 | 50 | 46 | 00 | 96 | 2.5 |
| Dates | 4 Dates | 1 | 2 | 3 | 85 | 90 | 3.0 |
| Figs, fresh | 4 Figs | 6 | 10 | 0 | 134 | 144 | 3.0 |
| Olives, ripe | 5 Olives | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Totals | | | 103 | 158 | 458 | 719 | |

In making these menus I have tried to select food that may be had in practically all sections of the country, and in nearly all seasons of the year. I have omitted many most wholesome fruits, because of the short season in which they are available. These may be substituted in their season for the dried fruits of the menus, using a sufficient quantity to make up the total calorie value of the article substituted. Be sure to maintain the protein values, as we must have the protein values for the repair and rebuilding of the wasted cell life. The low value of fats, and the high value of carbohydrates, appears in the last menus because persons who would select these live a sedentary life and can not handle a large amount of fats. T. S. is for tablespoon; they should be slightly rounded.

## SPECIAL MENUS FOR SPECIAL OCCASIONS

**Special Menu No. 25—Luncheon.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Chicken soup, rice | ½ Cup | 4 | 56 | 4 | 39 | 99 | 2.0 |
| Celery-cabbage salad | 2 T.S. Let. nest | 3 | 18 | 25 | 24 | 67 | 2.5 |
| Graham bread | 2 Thin slices | 2 | 24 | 6 | 122 | 152 | 3.7 |
| Butter | 1 Cu. inch | ⅔ | 2 | 150 | 00 | 152 | 3.0 |
| Baked potatoes | 1 Medium | 4 | 12 | 00 | 120 | 132 | 2.5 |
| Chicken fricassee | 1 Sm. service | 2 | 58 | 35 | 8 | 101 | 3.3 |
| Chicken gravy | 2 T. S. | 2 | 8 | 6 | 22 | 36 | 2.0 |
| Green peas | 2 T. S. | 2 | 8 | 4 | 20 | 32 | 3.5 |
| Olives, ripe | 5 Olives | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Cherry pie | 1 Piece, med. | 3 | 18 | 15 | 172 | 205 | 3.5 |
| Totals | | | 208 | 295 | 534 | 1037 | |

**Special Menu No. 26—Dinner. Special Occasion.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Oyster soup, fresh | ½ Cup | 4 | 26 | 55 | 26 | 107 | 2.5 |
| Celery | 2 Stalks | 2 | 3 | 0 | 12 | 15 | 3.5 |
| Whole wheat bread | 2 Thin slices | 2 | 16 | 2 | 126 | 144 | 3.3 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Baked potatoes | 1 Small | 2 | 6 | 0 | 60 | 66 | 2.5 |
| Roast turkey | 2 Slices | 2 | 94 | 68 | 00 | 162 | 2.3 |
| Cranberry sauce | 2 T. S. | 2 | 1 | 1 | 26 | 28 | 3.0 |
| Sugar | ½ T. S. | ½ | 0 | 0 | 50 | 50 | 1.5 |
| Brown gravy | 2 T. S. | 2 | 8 | 6 | 22 | 36 | 2.5 |
| Green corn | 2 T. S. | 2 | 8 | 2 | 50 | 60 | 3.7 |
| Pumpkin pie | 1 Piece med. | 5 | 18 | 39 | 90 | 147 | 3.5 |
| Cream cheese | 1⅗ Cu. inches | 1 | 51 | 67 | 4 | 122 | 3.8 |
| Chocolate cake | 1 Med. piece | 1 | 9 | 12 | 82 | 103 | 3.0 |
| Totals | | | 241 | 327 | 548 | 1116 | |

**Special Menu No. 27—Luncheon. Special Occasion.**

| FOODS SERVED | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Cream of celery soup | ½ Cup | 4 | 14 | 18 | 32 | 64 | 2.5 |
| Orange-banana salad | 2 T. S. | 2 | 3 | 0 | 42 | 45 | 2.5 |
| White bread | 2 Thin slices | 2 | 27 | 4 | 128 | 159 | 3.2 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Baked sweet potatoes | 1 Small | 2 | 7 | 5 | 105 | 117 | 3.5 |
| Rice-egg omelette | 3 T. S. | 3 | 24 | 18 | 51 | 93 | 2.5 |
| Lima beans, green | 2 T. S. | 2 | 15 | 1 | 54 | 70 | 2.7 |
| Asparagus | 3 T. S. | 3 | 6 | 0 | 9 | 15 | 2.5 |
| Cottage cheese | 2 T. S. | 2 | 50 | 3 | 11 | 64 | 3.0 |
| Olives, ripe | 10 Olives, large | 2 | 8 | 98 | 16 | 122 | 3.0 |
| Pineapple, canned | 2 Slices, thin | 3 | 1 | 3 | 138 | 142 | 2.0 |
| Custard pie | 1 Piece, med. | 3 | 18 | 24 | 114 | 156 | 3.5 |
| Totals | | | 174 | 249 | 700 | 1123 | |

**Special Menu No. 28—Dinner. Special Occasion.**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cream of tomato soup | ½ Cup | 4 | 16 | 18 | 34 | 68 | 3.0 |
| Cucumber-tomato sal. | 2 T.S. in let. | 2 | 10 | 7 | 18 | 35 | 3.5 |
| Soda biscuit | 1 Biscuit | 2 | 16 | 26 | 100 | 142 | 4.5 |
| Butter | 1 Cu. inch | ⅔ | 2 | 150 | 000 | 152 | 3.0 |
| Lima beans, green | 2 T. S. | 2 | 10 | 00 | 36 | 46 | 2.7 |
| Roast leg of lamb | 2 Slices | 3 | 100 | 68 | 000 | 168 | 3.0 |
| Brown gravy | 2 T. S. | 2 | 8 | 10 | 22 | 40 | 2.5 |
| Green peas | 2 T. S. | 2 | 8 | 4 | 20 | 32 | 3.5 |
| Cranberry jam | 2 T. S. M'ld. | 2 | 0 | 2 | 113 | 115 | 3.0 |
| Black raspberry pie | 1 Piece, med. | 3 | 18 | 15 | 172 | 205 | |
| Totals | | | 188 | 300 | 515 | 1003 | |

These menus are to be used only on special occasions; many persons will be better off to omit the meal following the special luncheon or dinner.

# POISONOUS FOODS

Under our classification of foods we have briefly outlined poisonous foods. When we speak of poisonous foods we do not mean that they are classed as ''forbidden foods'' to all persons. Some of our national food products are classed under poisonous foods. One danger of the health culturist is to lay down cast iron rules that shall govern all individuals. No greater mistake than this can be made. The scriptural injunction, ''Prove all things, hold fast to that which is good,'' is a wise dictum for the health culturist. ''What is one man's meat, is another man's poison'' is a true maxim in the study of the food supply for the individual. Some foods classed as poisonous foods are wholesome for the millions, yet with certain individuals, and under certain conditions their poisonous elements are manifest. It is a wise provision to study the poisonous foods and eat sparingly of them until we know whether they are poisonous in our own individual case. This should be the real test of all foods.

We find the following foods classed as poisonous by many of our food experts, while many others pass them by without mention. Potatoes, tomatoes, eggs, vinegar, salt, pepper, spices, fruit essences, meat extracts, wine and brandy sauces, pickles, tea, coffee, many soda fountain drinks, cocoa, and all alcoholic drinks.

But few are seriously affected immediately by these poisons. With many there is a gradual undermining of the health by their constant use. It all depends on how large a portion of a particular kind of poison the eliminating organs can handle. Those who are seriously affected find the eliminating organs wholly inadequate to handle the poisons.

*The Potato.* The potato belongs to the solanum, or deadly nightshade family. In the potato, especially in the skin, there is a trace of poison. To the masses this is harmless, while to some individuals it immediately assumes dangerous proportions. The potato has become almost the sole source of food supply in some sections of the world. We are told that in some sections of Ireland the poor peasants have made the potato the chief source of food. The potato does not furnish a balanced ration. Some elements of nutrition are sadly lacking. Nature tries to provide for this lack by increasing the capacity for the food supply. The peasants living on the potato as their chief food supply acquire what has been called the "potato belly." The abdomen becomes greatly enlarged. We have known people this side of Ireland afflicted with the same disease. Our advice is "quit your meanness," or, in other words, cut down your food supply. The abnormal food supply is far more dangerous than the poison found in the potato. The potato develops a far greater percentage of poison when exposed to the sun in the open field. It becomes a dark greenish color, and the percentage of poison is so increased that no individual can safely eat it.

*The Tomato.* The tomato was long regarded as poisonous. It is still classed with poisonous foods. To some it is "forbidden fruit"; to many others, in fact to most people, it is not only a most wholesome food but a real medicinal food. To many individuals it is one of the finest tonics for the liver and kidneys that can be found. To a few it takes its place with some other foods which must be absolutely forbidden. Give the tomato a fair test in your diet to assure you that you are not simply prejudiced against it. The taste for much of our food must be acquired, as that for figs, olives and tomatoes. The raw tomato is especially wholesome because of the rich supply of mineral salts. It also furnishes a rich supply of iron for the blood. For the individual fighting surplus flesh it is one of his best friends. It also furnishes one of our most wholesome soups, and is indispensable in our salad supply. Cultivate the friendship of the tomato.

*Eggs.* The egg is regarded as one of our most wholesome products in our food supply. Some have classed the egg among the poisonous foods. To the masses it is most wholesome when used sparingly. Occasionally we find an individual to whom the egg is poison. The poisonous elements increase with the age of the egg. None but fresh eggs should be used by the individual eating eggs for health.

*Vinegar.* This is one of the poisonous foods that should have no place in the diet of any individual who values his health. Foods prepared with vinegar are not only wholly indigestible but they hasten sclerosis, or the hardening of the arteries, which is one of the gravest results, as we consider the problem of health. It is a true saying, ''A man is as old as his arteries.'' Vinegar pickles the food and renders digestion impossible. It makes the blood sluggish, hardens the arteries, fills the system with poisons, causing rheumatism, gout, sciatica and other kindred diseases. Don't even have a vinegar bottle in your house. If you desire an acid for your food, use lemon juice. This turns to an alkali in the stomach and aids digestion and purifies the blood. All vinegar pickles should be eliminated from the diet.

*Salt.* Few people realize the dangers arising from the lavish use of salt in their food supply. The dangers of salt comes from the increased demand for it by the depraved appetite. The demand is for more and more salt. It is impossible for the system to use salt as food. It must be eliminated by the eliminating organs. The skin, the liver, the kidneys, the bowels must eliminate the salt. When these organs are unable for the task, then it settles as sediments about the joints and aids the vinegar in producing that unwelcome guest, rheumatism. In warm weather the salt pours out through the 3,000,000 pores of the skin and the perspiration becomes as salty as brine to the excessive user of salt. When the weather grows colder the excessive use of salt continues, but the elimination through the sweat glands is stopped. The poison must be eliminated in some way. Nature has provided a severe cold for her own protection against the poisonous salt, which has clogged the system. Salt pours out through the throat's delicate membrane, from the lungs. The salt water runs in streams from the nose. It even pour out through the eyes. This is one of Nature's methods (Nature is only another term for God) for eliminating the salt poison from the system. Scientists are coming to consider salt as one of the most common causes of cold and consumptive tendencies. The expectoration of the consumptive patient is intensely salty. Many of our tuberculosis sanitariums are denying salt to their patients. In fact many of our leading health sanitariums are forbidding the use of salt. Many able physicians refuse their patients salt. It has also been observed that excessive use of salt produces scurvy. This has been demonstrated where individuals have been forced to exist on a ration of salt meats and salt fish.

### DANGERS TO CHILDREN

Many children have suffered untold abuse by the parent giving an abnormal amount of salt. The true taste has been destroyed and an abnormal appetite has been developed. Salt is often the initial stimulant leading to the drink habit. It is often the cause of depression that makes life seem a burden. It becomes a stimulant for the moment. When this is over a fearful reaction sets in which deranges the whole system. It creates a false appetite and craving in the system akin to that produced by tobacco and strong drink. In many cases it has dethroned reason. In some instances it has caused death. Young women have been known to eat salt for their complexion, until the whole system has become deranged. They become pale and anaemic, their vitality runs low. The brain ceases to perform its functions. Death has often been the result. Nature is her own best chemist. Her fruits and vegetables are most wholesome when we omit our condiments of vinegar, pepper, sugar, spices and catsups.

### DEPRAVED TASTE

True, our tastes have become depraved by long continued use of these things. We must re-educate our taste. The scientists tell us that our taste is in the mind. Any individual who can change his mind, can change his taste. When we have come to appreciate the delicate flavor of our fruits and our vegetables and to separate these from the depraved taste which we have acquired by the use of these false stimulants, they will appear to us as attractive as the natural delicate perfume of the heliotrope, the carnation, or the rose.

The New Health Conscience demands that our abnormal appetite for highly seasoned food shall be suppressed. They are as dangerous as the abnormal appetite for strong drink. The real searcher after health is willing to endure self-denial. Like Paul, he must "Keep the body under."

*Tea and Coffee.* Tea and coffee have no food value and are mere stimulants and should be avoided by those who are real searchers after health. They help to overthrow the nervous system. The nerves are the danger signal of this electric age. We dare not use anything in our food supply that will increase the tension of our nervous system. Children should absolutely be prohibited from the use of tea and coffee.

# SPECIAL MENU CALORIE TABLES

## FRUIT

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Apple, raw | 18 | 1 Medium | 6 | 5.5 | 3 | 4 | 100 | 107 | 3.5 |
| Apple juice | 17 | 1 Glass | 4 | 6.0 | 00 | 00 | 68 | 68 | 1.0 |
| Apple sauce | 26 | 3 T. S. | 3 | 4.0 | 1 | 1 | 76 | 78 | 2.0 |
| Apple, baked | 30 | 1 Medium | 4 | 3.3 | 2 | 2 | 116 | 120 | 1.7 |
| Apricots | 16 | 4 Medium | 4 | 6.4 | 0 | 0 | 64 | 64 | 2.5 |
| Blackberries | 17 | 3 T. S. | 3 | 6.0 | 5 | 0.4 | 45 | 51 | 2.0 |
| Blackberry juice | 30 | 1 Glass | 4 | 3.3 | 0 | 0 | 120 | 120 | 1.0 |
| Blackberry sauce | 33 | 2 T. S. | 2 | 3.0 | 1 | 3 | 62 | 66 | 1.5 |
| Banana, ripe | 30 | 1 Large | 5 | 3.3 | 7 | 3 | 140 | 150 | 3.3 |
| Cherries | 25 | 4 T. S. | 4 | 4.0 | 6 | 5 | 90 | 100 | 2.5 |
| Cranberries | 14 | 3 T. S. | 3 | 7.0 | 1 | 2 | 38 | 42 | 3.0 |
| Cherries, C. | 32 | 3 T. S. | 3 | 3.1 | 4 | 2 | 91 | 96 | 2.5 |
| Currants | 93 | 2 T. S. | 2 | 1.1 | 6 | 5 | 148 | 186 | 2.5 |
| Cantaloupe | 11.5 | Medium | 6 | 9.0 | 4 | .... | 66 | 70 | 2.3 |
| Dates, dried | 90 | 8 Dates | 2 | 1.1 | 4 | 6 | 170 | 180 | 5.0 |
| Figs, fresh | 24 | 4 Figs | 6 | 4.2 | 10 | 0 | 134 | 144 | 3.0 |
| Figs, dried | 92 | 4 Medium | 2 | 1.1 | 8 | 7 | 170 | 184 | 3.0 |
| Grapes | 21 | 4 oz. | 4 | 5.0 | 5 | 6 | 72 | 84 | 2.0 |
| Grape juice | 24 | 4 oz. | 4 | 4.2 | 0 | 0 | 96 | 96 | 1.0 |
| Grape fruit | 13 | ½ Medium | 4 | 8.0 | 3 | 0.5 | 48 | 52 | 1.5 |
| Grape fruit juice | 13 | 6 T. S. | 3 | 7.7 | 0 | 0 | 40 | 40 | 1.5 |
| Huckleberries | 17 | 3 T. S. | 3 | 6.0 | 2 | 2 | 46 | 51 | 1.5 |
| Gooseberries | 20 | 2 T. S. | 2 | 5.0 | 0 | 0 | 40 | 40 | 2.0 |
| Lemon juice | 9 | 2 T. S. | 1 | 11.0 | 0 | 0 | 9 | 9 | 1.0 |
| Nectarines | 17 | 4 Large | 4 | 6.0 | 2 | 0 | 66 | 68 | 3.0 |
| Oranges | 15 | 2 Medium | 8 | 7.0 | 7 | 1 | 112 | 120 | 1.5 |
| Orange juice | 15 | 6 T. S. | 3 | 6.7 | 0 | 0 | 45 | 45 | 1.0 |
| Olives, ripe | 61 | 5 Large | 1 | 1.7 | 4 | 49 | 8 | 61 | 3.0 |
| Olive oil | 264 | 1 T. S. | 0.5 | 0.4 | 0 | 132 | 0 | 132 | 2.5 |
| Peaches, fresh | 12 | 1 Large | 5 | 8.5 | 4 | 0.6 | 55 | 60 | 2.5 |
| Peaches, cooked | 21 | 3 T. S. | 3 | 5.0 | 2 | 0.5 | 60 | 63 | 3.0 |
| Pears, fresh | 19 | 2 Medium | 5 | 5.3 | 4 | 3 | 88 | 95 | 3.0 |
| Plums, fresh | 23 | 6 Medium | 5 | 4.4 | 0 | 5 | 110 | 115 | 2.5 |
| Plums, cooked | 37 | 3 T. S. | 3 | 2.6 | 10 | 0 | 100 | 111 | 2.0 |
| Pineapple, fresh | 12 | 2 Slices | 4 | 8.3 | 2 | 1 | 45 | 48 | 3.0 |

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Pineapple juice | 21 | 4 T. S. | 2 | 5.0 | 0 | 0 | 42 | 42 | 1.0 |
| Pineapple, cooked | 48 | 2 Slices | 4 | 2.1 | 2 | 4 | 185 | 192 | 2.0 |
| Prunes, dried | 27 | 2 T. S. | 2 | 3.8 | 0.5 | 1 | 53 | 54 | 2.0 |
| Persimmons | 40 | 2 Pers. | 2 | 2.5 | 2 | 2 | 76 | 80 | 3.0 |
| Raspberry | 16 | 3 T. S. | 3 | 6.3 | 3 | 0 | 45 | 48 | 2.0 |
| Raspberries, dried | 106 | 2 T. S. | 2 | 1.0 | 17 | 4 | 190 | 212 | 2.0 |
| Raspberry juice | 58 | 4 T. S. | 2 | 1.7 | 6 | 0 | 110 | 116 | 1.0 |
| Raisins | 100 | 1 T. S. | 1 | 1.0 | 3 | 4 | 93 | 100 | 2.5 |
| Raisins, cooked | 65 | 2 T. S. | 2 | 1.5 | 4 | 5 | 120 | 130 | 2.0 |
| Rhubarb, cooked | 6.5 | 3 T. S. | 3 | 16.0 | 2 | 3 | 15 | 20 | 2.7 |
| Strawberries | 11 | 3 T. S. | 3 | 11.0 | 4 | 2 | 27 | 33 | 2.0 |
| Strawberries C | 19 | 3 T. S. | 3 | 5.3 | 2 | 0 | 55 | 67 | 2.0 |
| Watermelon | 9 | Medium | 6 | 11.0 | 3 | 2 | 50 | 54 | 3.0 |
| Whortleberries | 24 | 2 T. S. | 2 | 4.2 | 2 | 7 | 39 | 48 | 2.0 |
| VEGETABLES | | | | | | | | | |
| Artichoke | 7 | 2 T. S. | 2 | 14.3 | 2 | 0 | 12 | 14 | 2.3 |
| Asparagus | 5 | 3 T. S. | 3 | 20.0 | 6 | 0.5 | 9 | 15 | 2.5 |
| Beans, baked | 38 | 3 T. S. | 3 | 2.6 | 28 | 10 | 75 | 114 | 3.7 |
| Beans, lima cooked | 23 | 3 T. S. | 3 | 4.3 | 15 | 1 | 54 | 70 | 2.7 |
| Beans, string, ckd | 6 | 3 T. S. | 3 | 16.6 | 4 | 5 | 9 | 18 | 2.5 |
| Beets, cooked | 13 | 1 Small | 4 | 7.5 | 12 | 1 | 38 | 52 | 3.0 |
| Beet Greens, ckd | 15 | 3 T. S. | 3 | 6.6 | 12 | 17 | 16 | 45 | 3.3 |
| Carrots, cooked | 13 | 3 T. S. | 3 | 7.7 | 2 | 3 | 35 | 39 | 3.5 |
| Cabbage, raw | 9 | 3 T. S. | 3 | 11.0 | 6 | 1 | 20 | 27 | 2.5 |
| Cabbage, cooked | 8 | 3 T. S. | 3 | 12.5 | 5 | 8 | 12 | 24 | 4.5 |
| Celery, raw | 5.3 | 3 T. S. | 3 | 19.0 | 3 | 0.3 | 12 | 16 | 3.5 |
| Cauliflower | 9 | 2 T. S. | 2 | 11.0 | 4 | 1 | 13 | 18 | 2.5 |
| Corn, green, cooked | 30 | 3 T. S. | 3 | 3.3 | 12 | 3 | 75 | 90 | 3.7 |
| Cucumbers | 5 | 2 T. S. | 2 | 20.0 | 2 | 0.5 | 8 | 10 | 4.0 |
| Egg plant | 8 | 4 Slices | 4 | 12.5 | 5 | 2 | 25 | 32 | 2.7 |
| Kohl-Rabi, raw | 9 | 2 T. S. | 2 | 11.0 | 5 | 0.3 | 13 | 18 | |
| Lentils, raw | 100 | 1 T. S. | 1 | 1.0 | 28 | 1 | 70 | 100 | |
| Letuce | 5.6 | Medium | 3 | 18.0 | 5 | 1 | 11 | 17 | 2.5 |
| Lettuce sal. dress. | 20 | Medium | 2 | 5.0 | 4 | 6 | 20 | 40 | 3.0 |
| Mushrooms | 13 | 2 T. S. | 2 | 8.0 | 9 | 1 | 16 | 26 | 3.0 |
| Onions, green | 14.4 | 3 Medium | 3 | 7.0 | 3 | 0.3 | 39 | 43 | 3.0 |
| Onions, cooked | 6 | 3 T. S. | 3 | 16.5 | 3 | 4 | 11 | 18 | 2.5 |
| Parsnips, cooked | 15 | 2 T. S. | 2 | 6.6 | 3 | 1 | 26 | 30 | 4.0 |
| Peas, green, ckd | 16 | 3 T. S. | 3 | 6.3 | 12 | 6 | 30 | 48 | 3.5 |
| Potatoes, baked | 33 | 1 Medium | 4 | 3.0 | 13 | 0.5 | 120 | 132 | 2.5 |

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Potatoes, mashed | 32 | 2 T. S. | 2 | 3.1 | 7 | 8 | 48 | 64 | 3.9 |
| Potato Chips | 166 | 1 T. S. | 1 | 6.0 | 12 | 70 | 84 | 166 | |
| Potatoes, sweet | 58 | 1 Medium | 4 | 11.7 | 15 | 10 | 210 | 232 | 3.5 |
| Radishes | 9 | 3 Medium | 3 | 11.0 | 5 | 9.5 | 22 | 27 | 3.5 |
| Rhubarb | 6.5 | 3 T. S. | 3 | 16.0 | 2 | 3 | 15 | 20 | |
| Rhubarb, cooked | 5 | 4 T. S. | 4 | 21.0 | 5 | 0 | 13 | 18 | 3.7 |
| Sauerkraut | 8 | 3 T. S. | 3 | 12.5 | 7 | 2 | 16 | 24 | 3.5 |
| Spinach, cooked | 16 | 3 T. S. | 3 | 6.2 | 12 | 22 | 14 | 48 | 3.0 |
| Squash, cooked | 15 | 3 T. S. | 3 | 7.0 | 3 | 2 | 40 | 45 | 3.0 |
| Succotash | 30 | 3 T. S. | 3 | 3.3 | 15 | 5 | 70 | 90 | 3.5 |
| Tomatoes, raw | 7 | 1 Medium | 5 | 14.3 | 8 | 3 | 28 | 35 | 2.0 |
| Tomatoes, cooked | 7 | 3 T. S. | 3 | 14.3 | 5 | 1 | 15 | 21 | 2.0 |
| Turnips, cooked | 6 | 3 T. S. | 3 | 16.7 | 3 | 8 | 8 | 18 | 4.5 |
| SOUP | | | | | | | | | |
| Beef soup | 8 | ½ Cup | 4 | 12.5 | 22 | 2 | 8 | 32 | 2.3 |
| Bean soup | 19 | ½ Cup | 4 | 5.3 | 18 | 7 | 51 | 76 | 2.0 |
| Bouillon | 3 | ½ Cup | 4 | 33.0 | 11 | 0.5 | 1 | 12 | 2.0 |
| Barley, cream of | 20 | ½ Cup | 4 | 5.0 | 14 | 14 | 52 | 80 | 2.5 |
| Chicken soup | 17 | ½ Cup | 4 | 6.0 | 52 | 4 | 12 | 68 | 2.0 |
| Clam chowder | 12 | ½ Cup | 4 | 8.5 | 10 | 4 | 34 | 48 | 2.5 |
| Corn, cream of | 17 | ½ Cup | 4 | 6.0 | 14 | 12 | 42 | 68 | 2.2 |
| Celery, cream of | 16 | ½ Cup | 4 | 6.3 | 14 | 14 | 32 | 64 | 2.5 |
| Consomme | 4 | ½ Cup | 4 | 25.0 | 13 | 0 | 3 | 16 | 2.0 |
| Onion, cream of | 20 | ½ Cup | 4 | 5.0 | 15 | 13 | 52 | 80 | 2.0 |
| Oyster soup | 6 | ½ Cup | 4 | 16.8 | 26 | 55 | 26 | 107 | 3.0 |
| Oxtail | 13 | ½ Cup | 4 | 8.0 | 22 | 6 | 24 | 52 | 2.5 |
| Pea soup | 18 | ½ Cup | 4 | 5.6 | 22 | 4 | 46 | 72 | 2.0 |
| Pea, cream of | 17 | ½ Cup | 4 | 6.0 | 15 | 15 | 38 | 68 | 2.0 |
| Potato, cream of | 21 | ½ Cup | 4 | 4.7 | 12 | 10 | 62 | 84 | 2.5 |
| Tomato | 15 | ½ Cup | 4 | 7.7 | 12 | 8 | 40 | 60 | 2.0 |
| Tomato, cream of | 16 | ½ Cup | 4 | 6.3 | 11 | 12 | 40 | 64 | 2.0 |
| MEAT—Cooked. Edible Portion | | | | | | | | | |
| Beef, corned | 80 | 2 Slices | 3 | 1.6 | 140 | 100 | 0 | 240 | 4.5 |
| Beef, dried | 60 | 2 Slices | 3 | 1.6 | 158 | 22 | 0 | 180 | 4.5 |
| Beef, roast | 100 | 2 Slices | 2 | 1.0 | 90 | 110 | 0 | 200 | 3.5 |
| Beef, loin broiled | 81 | 2 Slices | 2 | 1.2 | 86 | 76 | 0 | 162 | 3.5 |
| Beef, round | 53 | 2 Slices | 2 | 1.9 | 83 | 23 | 0 | 106 | 3.5 |
| Beef, boiled | 90 | Medium | 3 | 1.1 | 145 | 128 | 0 | 270 | 4.0 |
| Beef, pressed | 100 | 2 Slices | 2 | 1.0 | 88 | 112 | 0 | 200 | 3.5 |

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Beef brains | 48 | 2 T. S. | 3 | 2.1 | 98 | 46 | 0 | 144 | 3.5 |
| Beef tongue | 84 | 3 Slices | 3 | 1.2 | 115 | 137 | 0 | 252 | 4.0 |
| Beef tripe | 42 | Medium | 3 | 2.4 | 84 | 42 | 0 | 126 | 4.0 |
| Beef bologna | 73 | 3 Slices | 1 | 1.4 | 35 | 38 | 0 | 73 | 4.0 |
| Beef, sirloin | 55 | Medium | 2 | 1.8 | 78 | 32 | 0 | 110 | 3.5 |
| Beef sandwich | 62 | 1 T. S. | 1 | 1.6 | 44 | 18 | 0 | 62 | 3.5 |
| Chili concarne | 33 | 3 T. S. | 3 | 3.0 | 58 | 20 | 18 | 99 | 3.5 |
| Chicken, roast | 62 | Medium | 3 | 1.6 | 132 | 54 | 9 | 186 | 3.3 |
| Chicken fricassee | 53 | Medium | 3 | 1.9 | 88 | 58 | 12 | 159 | 3.3 |
| Chicken, broiled | 55 | Medium | 3 | 1.8 | 117 | 48 | 0 | 165 | 4.0 |
| Chicken, boned | 78 | 2 T. S. | 2 | 1.4 | 108 | 48 | 0 | 156 | 3.3 |
| Chicken giblet | 38 | 2 T. S. | 2 | 2.6 | 64 | 12 | 0 | 76 | 3.5 |
| Chicken sandwich | 66 | 1 Sandwich | 3 | 1.0 | 48 | 20 | 130 | 198 | 3.5 |
| Duck, tame, raw | 81 | 3 Slices | 3 | 1.2 | 120 | 122 | 0 | 243 | 4.3 |
| Duck, wild | 37 | 3 Slices | 3 | 2.8 | 98 | 15 | 0 | 111 | 4.0 |
| Goose, young | 115 | 2 Slices | 2 | .9 | 75 | 155 | 0 | 230 | 4.5 |
| Lamb leg, roast | 56 | 3 Slices | 3 | 1.8 | 100 | 68 | 0 | 168 | 3.0 |
| Lamb chop | 104 | 2 Chops | 2 | 1.0 | 88 | 120 | 0 | 208 | 3.5 |
| Mutton, shoulder | 78 | 2 Slices | 2 | 1.4 | 85 | 70 | 0 | 156 | 3.5 |
| Pheasant | 46 | 2 Slices | 2 | 2.2 | 78 | 15 | 0 | 92 | 3.0 |
| Quail | 48 | 2 Medium | 2 | 2.1 | 65 | 25 | 6 | 96 | 3.5 |
| Rabbit | 50 | 2 Slices | 2 | 2.0 | 69 | 31 | 0 | 100 | 3.5 |
| Snail | 21 | Medium | 2 | 5.0 | 26 | 16 | 0 | 42 | 3.0 |
| Squab | 90 | Medium | 2 | 1.1 | 2 | 82 | 98 | 180 | 2.5 |
| Turkey, roast | 81 | 3 Slices | 3 | 1.2 | 140 | 103 | 0 | 243 | 2.3 |
| Turkey, young | 94 | 3 Slices | 3 | 1.0 | 170 | 112 | 0 | 282 | 2.5 |
| Turkey, dark meat | 75 | 3 Slices | 3 | 1.4 | 200 | 25 | 0 | 225 | 2.5 |
| Turkey, light meat | 68 | 3 Slices | 3 | 1.5 | 178 | 26 | 0 | 204 | 2.5 |
| Turkey sandwich | 100 | 1 Sandwich | 3 | 1.0 | 125 | 175 | 0 | 300 | 2.5 |
| Veal Loin, roast | 51 | 2 Slices | 3 | 2.0 | 100 | 53 | 0 | 153 | 3.4 |
| Venison | 29 | 2 Slices | 2 | 3.5 | 52 | 6 | 0 | 58 | 2.2 |
| PORK | | | | | | | | | |
| Bacon, raw | 183 | 2 Slices | 1 | .6 | 25 | 158 | 0 | 183 | 4.4 |
| Frankfort sausage | 73 | 2 Links | 2 | 1.1 | 74 | 68 | 4 | 146 | 5.0 |
| Ham boiled | 83 | 2 Slices | 2 | 1.2 | 80 | 86 | 0 | 166 | 5.5 |
| Ham, boneless B. | 82 | 2 Slices | 2 | 1.2 | 85 | 80 | 0 | 164 | 5.5 |
| Ham, fried | 114 | Small | 1 | .9 | 46 | 68 | 0 | 114 | 5.5 |
| Ham, deviled | 112 | 1 T. S. | 1 | .9 | 42 | 70 | 0 | 112 | 5.5 |
| Wienerwurst | 93 | 2 Links | 2 | .1 | 100 | 80 | 6 | 186 | 5.5 |

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Summer sausage...... | 147 | 2 Links | 2 | .7 | 108 | 186 | 0 | 294 | 5.5 |
| Pork chops.............. | 130 | 1 Medium | 1 | .8 | 50 | 80 | 0 | 130 | 5.5 |
| Pork steak.............. | 143 | 1 Small | 1 | .7 | 33 | 110 | 0 | 143 | 5.5 |
| Pork, salt, fat........ | 230 | .5 Oz. | .5 | .5 | 3 | 112 | 0 | 115 | 5.5 |
| Pork sausage .......... | 85 | 2 Links | 2 | 1.2 | 68 | 102 | 0 | 170 | 5.0 |
| Pork brains.............. | 90 | 2 T. S. | 2 | 1.1 | 94 | 86 | 0 | 180 | 3.0 |
| Pickled feet............ | 58 | 1 Oz. | 1 | 1.7 | 30 | 28 | 0 | 58 | 5.5 |
| Pork ribs.................. | 130 | 2 Ribs | 2 | .8 | 112 | 148 | 0 | 260 | 5.5 |
| Frog legs.................. | 18 | Medium | 3 | 5.6 | 53 | 1 | 0 | 54 | 3.0 |

A slice of meat or fish 2x3x½ inches weighs about 3 ounces.

FISH—Cooked. Edible Portion

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Bass, striped, raw.. | 22 | Medium | 4 | 3.5 | 102 | 14 | 0 | 116 | 3.0 |
| Bass, sea, raw.......... | 24 | Medium | 4 | 4.2 | 93 | 3 | 0 | 96 | 3.0 |
| Blue fish, raw.......... | 42 | Medium | 3 | 2.4 | 106 | 20 | 0 | 126 | 3.0 |
| Catfish, raw............ | 71 | Medium | 3 | 1.4 | 86 | 126 | 0 | 213 | 3.5 |
| Codfish, boneless.... | 31 | Medium | 1 | 3.2 | 27 | 1 | 0 | 31 | 3.5 |
| Haddock, smoked.. | 27 | Small | 1 | 3.8 | 26 | 1 | 0 | 27 | 4.0 |
| Halibut, raw.......... | 35 | Medium | 4 | 2.8 | 110 | 30 | 0 | 140 | 3.0 |
| Mackerel, raw.......... | 40 | Medium | 3 | 2.5 | 88 | 32 | 0 | 120 | 3.5 |
| Mackerel, salt........ | 90 | Small | 2 | 1.1 | 70 | 110 | 0 | 180 | 4.0 |
| Span. Mack. brld.. | 48 | Medium | 3 | 2.1 | 113 | 31 | 0 | 144 | 3.5 |
| Perch, white, raw.. | 33 | Medium | 4 | 3.0 | 110 | 22 | 0 | 132 | 3.0 |
| Pickerel, raw.......... | 23 | Medium | 4 | 4.4 | 91 | 1 | 0 | 92 | 3.3 |
| Pompano, raw........ | 42 | Medium | 3 | 2.4 | 91 | 35 | 0 | 126 | 3.3 |
| Red Snapper, raw.. | 26 | Medium | 4 | 3.9 | 99 | 5 | 0 | 104 | 3.3 |
| Salmon, fresh, raw | 60 | Medium | 3 | 1.7 | 114 | 66 | 0 | 180 | 3.3 |
| Salmon, canned...... | 57 | 2 T. S. | 2 | 1.8 | 72 | 42 | 0 | 114 | 3.3 |
| Salmon, Calif., raw | 68 | Medium | 4 | 1.5 | 136 | 136 | 0 | 272 | 3.3 |
| Sardines, canned.... | 80 | 2 Sardines | 1 | 1.3 | 45 | 35 | 0 | 80 | 4.0 |
| Sturgeon, raw........ | 29 | Medium | 4 | 3.3 | 105 | 12 | 0 | 116 | 2.5 |
| Shad, raw................ | 47 | Medium | 4 | 2.1 | 125 | 66 | 0 | 188 | 2.5 |
| Shad roe, raw.......... | 38 | Medium | 3 | 2.6 | 88 | 16 | 10 | 114 | 3.0 |
| Smelt raw................ | 25 | Medium | 4 | 4.0 | 90 | 10 | 0 | 100 | 3.0 |
| Trout, brook, raw.. | 29 | Medium | 4 | 3.3 | 104 | 12 | 0 | 116 | 3.0 |
| Trout, brook, ckd.. | 42 | Medium | 3 | 2.4 | 100 | 26 | 0 | 126 | 3.0 |
| Trout, sal. or lake.. | 48 | Medium | 3 | 2.1 | 95 | 51 | 0 | 144 | 3.3 |
| Tuna, canned, fresh | 36 | Medium | 3 | 2.8 | 90 | 18 | 0 | 108 | 3.5 |
| Tuna, canned in oil | 81 | Medium | 2 | 1.2 | 86 | 74 | 2 | 162 | 3.5 |
| Herring, smoked.... | 88 | Medium | 1 | 1.2 | 62 | 26 | 0 | 88 | 4.5 |

## SHELL FISH

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Clams, cooked | 19 | 2 T. S. | 2 | 5.3 | 28 | 2 | 8 | 38 | 4.0 |
| Crabs, fresh | 27 | 3 T. S. | 3 | 3.7 | 60 | 7 | 4 | 71 | 3.5 |
| Crabs, canned | 23 | 3 T. S. | 3 | 4.4 | 60 | 6 | 3 | 69 | 3.5 |
| Crawfish | 23 | 2 T. S. | 2 | 4.4 | 42 | 2 | 3 | 46 | 3.5 |
| Lobster, canned | 24 | 2 T. S. | 2 | 4.2 | 40 | 5 | 3 | 48 | 3.5 |
| Oysters, raw | 14 | 3 T. S. | 3 | 7.1 | 24 | 5 | 13 | 42 | 3.0 |
| Oysters, cooked | 21 | 3 T. S. | 3 | 4.8 | 35 | 11 | 16 | 63 | 3.0 |
| Shrimps, cooked | 33 | 2 T. S. | 2 | 3.0 | 63 | 3 | 1 | 66 | 3.5 |
| Abalone, cooked | 32 | 2 T. S. | 2 | 3.2 | 52 | 0 | 10 | 62 | 4.0 |
| Turtle, green, fresh | 25 | 2 T. S. | 2 | 4.0 | 49 | 1 | 0 | 50 | 2.4 |

## ANIMAL PRODUCTS

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Butter, fresh | 225 | .5 Oz. | 0.5 | 0.44 | 1 | 111 | 0 | 112 | 3.0 |
| Buttermilk | 10 | 1 Glass | 5 | 5.0 | 18 | 3 | 29 | 50 | 2.0 |
| Beef juice | 7 | 2 T. S. | 1 | 14.0 | 6 | 1 | 0 | 7 | 2.0 |
| Cheese, full cream | 122 | 1 Oz. | 1 | 0.8 | 51 | 67 | 4 | 122 | 3.8 |
| Cheese, Cheddar | 134 | 1 Oz. | 1 | 0.75 | 54 | 72 | 8 | 134 | 3.8 |
| Cheese, crown brd. | 161 | 1 Oz. | 1 | 0.62 | 12 | 144 | 5 | 161 | 3.8 |
| Cheese, cottage | 32 | 3 Oz. | 3 | 3.1 | 76 | 4 | 16 | 96 | 3.0 |
| Cheese, Limburger | 105 | 1 Oz. | 1 | 1.0 | 43 | 55 | 7 | 105 | 3.5 |
| Cheese, Neuchatel | 98 | 1 Oz. | 1 | 1.1 | 38 | 57 | 3 | 98 | 3.8 |
| Cheese, pineapple | 140 | 1 Oz. | 1 | 0.7 | 58 | 77 | 5 | 140 | 3.8 |
| Cheese, Roquefort | 106 | 1 Oz. | 1 | 0.95 | 44 | 58 | 4 | 106 | 3.5 |
| Cheese, Swiss | 125 | 1 Oz. | 1 | .08 | 53 | 69 | 3 | 125 | 3.8 |
| Cheese, skmd. milk | 85 | 2 Oz. | 2 | 1.2 | 104 | 58 | 8 | 170 | 3.8 |
| Cream | 57 | 4 T. S. | 2 | 1.7 | 11 | 83 | 20 | 114 | 2.4 |
| Eggs, raw | 45 | 2 Eggs | 4 | 2.2 | 102 | 80 | 8 | 180 | 3.0 |
| Eggs, boiled | 48 | 2 Eggs | 4 | 2.8 | 96 | 90 | 6 | 192 | 3.0 |
| Eggs, poached | 68 | 2 Eggs | 4 | 1.5 | 158 | 112 | 0 | 272 | 2.5 |
| Egg omelette | 30 | 4 T. S. | 4 | 3.3 | 70 | 50 | 0 | 120 | 3.0 |
| Lard | 250 | 1 T. S. | 1 | 0.1 | 5 | 245 | 0 | 250 | 4.0 |
| Milk, whole | 20 | 1 Glass | 5 | 5.0 | 28 | 32 | 40 | 100 | 2.4 |
| Milk, skimmed | 10 | 1 Glass | 5 | 5.0 | 20 | 2 | 28 | 50 | 2.4 |
| Milk, cond. sweet. | 95 | 2 T. S. | 1 | 1.1 | 12 | 11 | 72 | 95 | 3.0 |
| Milk, cond. unsw. | 50 | 2 T. S. | 1 | 2.0 | 16 | 15 | 19 | 50 | 3.0 |
| Cottolene | 264 | 2 T. S. | 1 | 0.4 | 0 | 264 | 0 | 264 | 3.5 |
| Olive oil | 264 | 2 T. S. | 1 | 0.4 | 0 | 264 | 0 | 264 | 3.0 |
| Oleomargarine | 220 | 2 T. S. | 1 | 0.5 | 2 | 183 | 0 | 220 | 3.0 |

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Tallow | 264 | 2 T. S. | 1 | 0.4 | 9 | 264 | 0 | 264 | 3.5 |
| Whey | 8 | 1 Glass | 5 | 12.5 | 2 | 6 | 32 | 40 | 2.0 |
| BREAD and PASTRIES | | | | | | | | | |
| Bread, brown | 68 | 2 Slices | 3 | 1.5 | 18 | 6 | 180 | 204 | 3.5 |
| Bread, corn | 75 | 1 Square | 3 | 1.3 | 30 | 19 | 166 | 225 | 3.5 |
| Bread, graham | 76 | 2 Slices | 3 | 1.3 | 35 | 8 | 185 | 228 | 3.7 |
| Bread, gluten | 73 | 2 Slices | 3 | 1.4 | 35 | 6 | 178 | 219 | 3.5 |
| Bread, whole wheat | 72 | 2 Slices | 3 | 1.4 | 25 | 3 | 188 | 216 | 3.3 |
| Bread, rye | 74 | 2 Slices | 3 | 1.4 | 32 | 2 | 188 | 222 | 3.7 |
| Bread, rye black | 70 | 2 Slices | 3 | 1.4 | 35 | 2 | 174 | 210 | 3.7 |
| Bread, rye, whole | 57 | 2 Slices | 3 | 1.8 | 42 | 2 | 127 | 171 | 3.7 |
| Bread, white | 79 | 2 Slices | 3 | 1.2 | 40 | 5 | 192 | 237 | 3.2 |
| Bread, white cream | 78 | 2 Slices | 3 | 1.2 | 38 | 4 | 190 | 234 | 3.2 |
| Bread, white Vien. | 77 | 2 Slices | 3 | 1.2 | 32 | 4 | 195 | 231 | 3.5 |
| Bread, toast | 90 | 2 Slices | 3 | 1.1 | 40 | 6 | 224 | 270 | 3.0 |
| Bread-Zwieback | 123 | 2 Slices | 2 | 0.8 | 25 | 27 | 194 | 246 | 3.0 |
| Bread, salt rising | 77 | 2 Slices | 3 | 1.2 | 32 | 5 | 194 | 231 | 4.0 |
| Bread, raisin | 79 | 2 Slices | 3 | 1.2 | 30 | 7 | 200 | 237 | 3.5 |
| Bread, buns | 91 | 2 Slices | 3 | 1.1 | 25 | 26 | 222 | 273 | 3.0 |
| Buns, cinnamon | 98 | 2 Buns | 3 | 1.1 | 35 | 28 | 232 | 294 | 3.5 |
| Buns, sugar | 91 | 2 Buns | 3 | 1.1 | 32 | 28 | 213 | 237 | 3.5 |
| Biscuit, home-made | 81 | 2 Biscuits | 3 | 1.2 | 33 | 10 | 200 | 243 | 4.0 |
| Biscuit, Maryland | 94 | 2 Biscuits | 3 | 1.1 | 32 | 21 | 233 | 282 | 4.5 |
| Biscuit, soda | 74 | 2 Biscuits | 3 | 1.4 | 25 | 40 | 155 | 222 | 4.5 |
| Biscuit, wh. bread | 77 | 2 Biscuits | 3 | 1.2 | 30 | 5 | 196 | 231 | 3.2 |
| Biscuit, beaten | 118 | 2 Biscuits | 2 | 0.85 | 32 | 45 | 168 | 236 | 3.0 |
| Gems, graham | 70 | 2 Gems | 3 | 1.4 | 32 | 36 | 142 | 210 | 3.3 |
| Buns, hot cross | 80 | 2 Buns | 3 | 1.3 | 30 | 18 | 122 | 240 | 4.0 |
| Rolls, French | 82 | 2 Rolls | 3 | 1.2 | 30 | 12 | 200 | 243 | 3.5 |
| Rolls, plain | 88 | 2 Rolls | 3 | 1.2 | 34 | 15 | 215 | 264 | 3.5 |
| Rolls, plain | 92 | 2 Rolls | 3 | 1.1 | 36 | 14 | 226 | 276 | 3.5 |
| CRACKERS | | | | | | | | | |
| Boston split crack. | 118 | 2 Crackers | 1 | 0.85 | 15 | 11 | 92 | 118 | 4.0 |
| Butter crackers | 121 | 8 Crackers | 1 | 0.85 | 12 | 13 | 96 | 121 | 3.5 |
| Cream crackers | 120 | 2 Crackers | 1 | 0.85 | 13 | 16 | 91 | 120 | 3.5 |
| Egg crackers | 130 | Crackers | 1 | 0.77 | 17 | 20 | 93 | 130 | 3.2 |
| Graham crackers | 123 | 4 Crackers | 1 | 0.85 | 13 | 12 | 97 | 122 | 3.0 |
| Oatmeal crackers | 123 | 2 Crackers | 1 | 0.85 | 16 | 14 | 93 | 123 | 3.3 |
| Oyster crackers | 123 | 20 Crackers | 1 | 0.85 | 15 | 14 | 94 | 123 | 3.0 |

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Pretzels | 106 | 3 Pretzels | 1 | 0.25 | 11 | 5 | 88 | 106 | 3.5 |
| Snaps, ginger | 118 | 3 Snaps | 1 | 0.85 | 9 | 11 | 98 | 118 | 3.5 |
| Saltines | 125 | 4 Crackers | 1 | 0.80 | 14 | 18 | 93 | 125 | 3.0 |
| Water crackers | 118 | 4 Crackers | 1 | 0.85 | 16 | 7 | 95 | 118 | 3.0 |
| Soda crackers | 120 | 5 Crackers | 1 | 0.85 | 13 | 12 | 96 | 120 | 3.0 |
| CAKES and COOKIES | | | | | | | | | |
| Bakers' cake | 86 | 1 Slice | 1 | 1.2 | 8 | 6 | 72 | 86 | 2.5 |
| Chocolate lay. cake | 103 | 1 Slice | 1 | 1.0 | 9 | 12 | 82 | 103 | 3.0 |
| Coffee cake | 102 | 1 Slice | 1 | 1.0 | 9 | 10 | 83 | 102 | 3.0 |
| Cup cake | 110 | 1 Slice | 1 | 0.9 | 8 | 12 | 90 | 110 | 3.0 |
| Drop cake | 118 | 1 Cake | 1 | 0.85 | 12 | 22 | 84 | 118 | 2.5 |
| Ginger bread | 104 | 1 Slice | 2 | 0.95 | 16 | 25 | 168 | 208 | 3.0 |
| Frosted cake | 116 | 1 Slice | 1 | 0.85 | 8 | 12 | 86 | 116 | 3.5 |
| Sponge cake | 110 | 1 Slice | 1 | 0.90 | 8 | 14 | 90 | 110 | 2.5 |
| Doughnuts | 125 | 1 Doughnut | 1 | 0.80 | 10 | 32 | 83 | 125 | 4.0 |
| Fruit cake | 110 | 1 Slice | 1 | 0.90 | 8 | 15 | 87 | 110 | 4.0 |
| Fig bars | 104 | 2 Bars | 1 | 0.95 | 6 | 10 | 88 | 104 | 3.5 |
| Jelly roll | 100 | 1 Slice | 1 | 1.00 | 6 | 4 | 90 | 100 | 3.3 |
| Nut cake | 98 | 1 Slice | 1 | 1.00 | 15 | 5 | 78 | 98 | 4.0 |
| Vanilla wafers | 128 | 8 Wafers | 1 | 0.80 | 10 | 20 | 98 | 128 | 3.5 |
| Lady fingers | 105 | 4 Fingers | 1 | 0.95 | 12 | 4 | 90 | 105 | 4.0 |
| PIES and PASTRIES | | | | | | | | | |
| Apple pie | 80 | 1 Piece | 3 | 1.25 | 15 | 45 | 180 | 240 | 3.5 |
| Blackberry pie | 70 | 1 Piece | 3 | 1.45 | 18 | 15 | 172 | 210 | 3.0 |
| Huckleberry pie | 65 | 1 Piece | 3 | 1.55 | 18 | 21 | 156 | 195 | 3.0 |
| Cherry pie | 70 | 1 Piece | 3 | 1.45 | 18 | 15 | 172 | 210 | 3.5 |
| Cream pie | 97 | 1 Piece | 3 | 0.04 | 15 | 48 | 225 | 288 | 3.5 |
| Custard pie | 52 | 1 Piece | 3 | 0.85 | 18 | 30 | 118 | 166 | 3.5 |
| Lemon pie | 74 | 1 Piece | 3 | 0.35 | 15 | 45 | 162 | 222 | 3.5 |
| Mince pie | 84 | 1 Piece | 3 | 0.20 | 24 | 52 | 174 | 250 | 4.0 |
| Pumpkin pie | 52 | 1 Piece | 3 | 0.95 | 18 | 39 | 99 | 156 | 3.5 |
| Raisin pie | 88 | 1 Piece | 3 | 9.15 | 12 | 48 | 204 | 264 | 3.5 |
| Rice custard | 52 | 3 T. S. | 3 | 9.95 | 15 | 18 | 123 | 156 | 3.0 |
| Tapioca pudding | 45 | 3 T. S. | 3 | 2.20 | 12 | 12 | 111 | 135 | 3.0 |
| Milk custard | 30 | 3 T. S. | 3 | 3.30 | 33 | 30 | 27 | 90 | 3.0 |
| Blanc mange | 38 | 3 T. S. | 3 | 2.70 | 9 | 6 | 33 | 38 | 3.0 |
| Jumbles | 118 | 1 Oz. | 1 | 0.85 | 11 | 21 | 86 | 118 | 3.0 |
| Tapioca | 41 | 2 T. S. | 2 | 2.50 | 4 | 2 | 35 | 41 | 3.0 |

## SWEETS—GENERAL

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Candy average | 112 | 1 Oz. | 1 | 0.90 | 0 | 0 | 96 | 96 | 1.5 |
| Honey | 94 | 1 Oz. | 1 | 1.05 | 0 | 0 | 94 | 94 | 2.0 |
| Molasses, cane | 80 | 1 Oz. | 1 | 1.25 | 3 | 0 | 77 | 80 | 1.3 |
| Corn starch | 105 | 1 Oz. | 1 | 1.00 | 0 | 0 | 90 | 90 | 3.0 |
| Maple syrup | 83 | 1 Oz. | 1 | 1.00 | 0 | 0 | 71 | 71 | 1.5 |
| Maple sugar | 100 | 1 Oz. | 1 | 1.00 | 0 | 0 | 85 | 85 | 1.5 |
| Powdered sugar | 116 | 1 Oz. | 1 | 0.90 | 0 | 0 | 100 | 100 | 1.5 |
| Brown sugar | 116 | 1 Oz. | 1 | 0.90 | 0 | 0 | 95 | 95 | 1.5 |
| Granulated sugar | 116 | 1 Oz. | 1 | 0.86 | 0 | 0 | 100 | 100 | 1.5 |
| Chocolate | 191 | 1 Oz. | 1 | 0.55 | 27 | 102 | 62 | 191 | |
| Cocoa, average | 150 | 1 Oz. | 1 | 0.67 | 38 | 50 | 62 | 150 | 2.0 |
| Cocoanut, prepared | 195 | 1 Oz. | 1 | 0.55 | 14 | 16 | 165 | 195 | |
| **CEREAL FOODS** | | | | | | | | | |
| Barley, pearl mush | 21 | 3 Oz. | 3 | 4.80 | 6 | 1 | 56 | 63 | 3.5 |
| Corn, parched | 119 | 2 Oz. | 2 | 0.85 | 28 | 22 | 188 | 238 | 4.5 |
| Corn, popped | 118 | 2 Oz. | 2 | 0.85 | 26 | 12 | 198 | 236 | 3.7 |
| Corn meal mush | 27 | 4 Oz. | 4 | 3.70 | 60 | 0 | 48 | 108 | 3.5 |
| Cornflakes, toasted | 103 | 2 Oz. | 2 | 1.00 | 20 | 1 | 184 | 206 | 2.0 |
| Gluten Mush, 20% | 21 | 3 Oz. | 3 | 4.80 | 27 | .3 | 36 | 63 | 2.4 |
| Flour, white | 104 | 2 T. S. | 1 | 1.00 | 16 | 2 | 86 | 104 | |
| Hominy, cooked | 24 | 3 T. S. | 3 | 4.20 | 7 | 1 | 64 | 72 | 4.0 |
| Macaroni, cooked | 26 | 3 T. S. | 3 | 3.80 | 12 | 6 | 60 | 78 | 3.2 |
| Oats, rolled mush | 18 | 2 T. S. | 2 | 5.60 | 8 | 0 | 28 | 36 | 3.7 |
| Rice, boiled | 32 | 3 T. S. | 3 | 3.15 | 12 | 0 | 82 | 96 | 1.3 |
| Rice flakes, toasted | 106 | 3 T. S. | 3 | 0.95 | 27 | 1 | 292 | 318 | 1.2 |
| Wheat, crkd., ckd. | 26 | 3 T. S. | 3 | 3.80 | 12 | 1 | 66 | 78 | 3.7 |
| Wheat flakes, tstd. | 104 | 2 Oz. | 2 | 0.95 | 22 | 1 | 180 | 208 | 2.0 |
| Shredded wh. bis. | 106 | 2 Biscuits | 2 | 0.95 | 24 | 4 | 182 | 212 | 2.0 |
| Toast, hygienic | 120 | 2 Slices | 2 | 0.85 | 25 | 27 | 188 | 240 | 2.5 |
| Infant-invalid food | 112 | 1 Oz. | 1 | 0.90 | 16 | 5 | 91 | 112 | 2.0 |
| Oat meal gruel | 10 | 3 T. S. | 3 | 10.00 | 4 | 1 | 25 | 30 | 1.5 |
| Sago, cooked | 26 | 3 T. S. | 3 | 3.80 | 8 | 0 | 70 | 78 | 2.7 |
| Gravy, brown | 20 | 3 T. S. | 3 | 5.00 | 12 | 15 | 33 | 60 | 2.5 |
| **NUTS AS PURCHASED** | | | | | | | | | |
| Almonds, edible P. | 190 | 10 Nuts | 1 | 0.53 | 43 | 111 | 36 | 190 | 2.7 |
| Almond butter | 209 | 1 T. S. | 1 | 0.48 | 50 | 134 | 25 | 209 | 3.5 |
| Beech nuts | 114 | 2 T. S. | 2 | 0.90 | 52 | 140 | 35 | 228 | 2.7 |
| Brazil nuts | 104 | 3 Nuts | 1 | 0.98 | 20 | 75 | 08 | 104 | 3.3 |

| Calories | Per Oz. | Service | Oz. | No. Oz. 100 Cal. | Cal. of Protein | Cal. Fat | Cal. Carb. | Tot. Cal. | Hours Digest |
|---|---|---|---|---|---|---|---|---|---|
| Butternuts, ed. P...... | 198 | 1 T. S. | 1 | 0.51 | 60 | 130 | 08 | 198 | 3.5 |
| Chestnuts, fresh....... | 70 | 10 Nuts | 2 | 1.40 | 18 | 13 | 109 | 140 | 2.5 |
| Cocoanuts, edible P. | 185 | 1 Oz. | 1 | 0.55 | 14 | 108 | 63 | 185 | 3.5 |
| Cocoanut, milk......... | 10 | 6 T. S. | 3 | 10.00 | 2 | 18 | 10 | 30 | 2.0 |
| Cocoanut, prepared | 195 | 1 T. S. | 1 | .5 | 13 | 116 | 65 | 194 | 2.5 |
| Filberts, hazelnuts | 100 | 12 Nuts | 2 | 1.00 | 34 | 138 | 28 | 200 | 3.0 |
| Hickorynuts, ed. P. | 209 | 1 T. S. | 1 | 0.48 | 35 | 150 | 24 | 209 | 3.5 |
| Peanuts .................... | 121 | 20 Nuts | 2 | 0.65 | 70 | 106 | 66 | 242 | 3.5 |
| Peanuts, edible P... | 160 | 1 T. S. | 1 | 0.62 | 46 | 70 | 44 | 160 | 3.5 |
| Peanut butter........... | 177 | 1 T. S. | 1 | 0.57 | 57 | 88 | 32 | 177 | 2.5 |
| Pecans, polished....... | 101 | 6 Nuts | 1 | 1.00 | 10 | 76 | 14 | 101 | 2.4 |
| Pecans, edible........... | 216 | 1 T. S. | 1 | 0.48 | 25 | 262 | 36 | 216 | 2.7 |
| Pinenuts, edible P... | 200 | 1 T. S. | 1 | 0.50 | 30 | 132 | 38 | 200 | 3.5 |
| Walnuts, black......... | 50 | 4 Nuts | 1 | 2.00 | 15 | 30 | 6 | 50 | 4.0 |
| Walnuts, Eng. Cal... | 86 | 6 Nuts | 2 | 1.20 | 30 | 114 | 30 | 172 | 3.0 |
| Walnuts, edible Cal | 205 | 1 T. S. | 1 | 2.50 | 35 | 135 | 35 | 205 | 3.0 |
| SALADS and RELISHES | | | | | | | | | |
| Banana & Pineapple | 25 | 3 T. S. | 3 | 4.00 | 6 | 3 | 22 | 75 | 3.0 |
| Banana-apple salad | 24 | 3 T. S. | 3 | 4.20 | 5 | 2 | 65 | 72 | 3.0 |
| Cabbage-lettuce sal. | 18 | 3 T. S. | 2 | 5.6 | 12 | 17 | 16 | 36 | 2.5 |
| Celery-lettuce sal.... | 15 | 3 T. S. | 2 | 6.6 | 12 | 7 | 10 | 30 | 2.5 |
| Cucumber-tom. sal. | 18 | 3 T. S. | 3 | 5.6 | 15 | 10 | 27 | 54 | 3.5 |
| Lettuce-tom. salad... | 19 | 3 T. S. | 3 | 5.3 | 12 | 18 | 26 | 57 | 2.5 |
| Tomato salad drsg. | 14 | 3 T. S. | 3 | 7.7 | 6 | 10 | 25 | 42 | 2.5 |
| Pineapple-apple sal. | 20 | 3 T. S. | 3 | 5.0 | 2 | 2 | 53 | 57 | 3.0 |
| Pineap.-orange sal. | 18 | 3 T. S. | 3 | 5.6 | 3 | 9 | 51 | 54 | 2.0 |
| Banana-orange sal. | 23 | 3 T. S. | 3 | 4.4 | 4 | 0 | 64 | 68 | 2.5 |
| Potato salad............. | 44 | 3 T. S. | 2 | 2.3 | 12 | 19 | 84 | 132 | 5.5 |
| Lobster salad........... | 25 | 2 T. S. | 2 | 2.8 | 18 | 7 | 20 | 45 | 3.5 |
| Chicken salad........... | 44 | 2 T. S. | 2 | 2.3 | 48 | 28 | 14 | 90 | 3.5 |
| Shrimp salad........... | 40 | 2 T. S. | 1 | 2.5 | 26 | 0 | 14 | 40 | 3.5 |
| Waldorf salad......... | 18 | 2 T. S. | 2 | 3.6 | 2 | 2 | 32 | 36 | 3.3 |
| French cr. sal. drsg. | 59 | 2 T. S. | 1 | 1.7 | 13 | 25 | 20 | 59 | 3.5 |
| French dressing....... | 59 | 1 T. S. | 1 | 1.70 | 2 | 0 | 57 | 59 | 2.5 |
| Mayonnaise dressg. | 40 | 1 T. S. | 1 | 2.50 | 19 | 14 | 7 | 40 | 2.5 |

# SCIENTIFIC FOOD ANALYSIS

## TEN ARTICLES OF FOOD HIGH IN PROTEIN

Table No. 2

| FOOD PRODUCTS | Protein Pct. | Fats Pct. | Carbohydrates Pct. | Calories Fuel Values Per lb. |
|---|---|---|---|---|
| Cheddar cheese | 27.7 | 36.0 | 4.1 | 2075 |
| Swiss cheese | 27.6 | 34.9 | 1.3 | 2010 |
| Soy beans (China) | 34.0 | 16.8 | 35.7 | 1970 |
| Cheese, full cream | 26.0 | 33.7 | 2.4 | 1885 |
| Loin steak, tenderloin | 23.5 | 20.4 | 0.0 | 1300 |
| Roast turkey | 27.8 | 18.4 | 0.0 | 1295 |
| Sandwich meat as purchased | 28.0 | 11.0 | 0.0 | 985 |
| Dried beef | 39.2 | 5.4 | 0.0 | 960 |
| Round steak, cooked | 27.6 | 7.7 | 0.0 | 840 |

## TEN ARTICLES OF FOOD RICH IN CARBOHYDRATES

| FOOD PRODUCTS | Protein Pct. | Fats Pct. | Carbohydrates Pct. | Calories Fuel Values Per lb. |
|---|---|---|---|---|
| Sugar, granulated | 0.0 | 0.0 | 100 | 1750 |
| Candy, plain | 0.0 | 0.0 | 96 | 1680 |
| Starch | 0.0 | 0.0 | 90 | 1675 |
| Tapioca | 0.0 | 0.0 | 82 | 1650 |
| Rye Flower | 12.9 | 6.8 | 79 | 1620 |
| Rice | 12.3 | 8.0 | 79 | 1620 |
| Corn Meal | 12.5 | 9.2 | 75 | 1635 |
| Wheat flour, patent process | 12.0 | 11.4 | 75 | 1633 |
| Honey | 0.0 | 0.0 | 81 | 1420 |
| Buckwheat flour | 13.6 | 6.4 | 78 | 1605 |

## ARTICLES OF FOOD RICH IN FATS

| FOOD PRODUCTS | Protein Pct. | Fats Pct. | Carbohydrates Pct. | Calories Fuel Values Per lb. |
|---|---|---|---|---|
| Cottolene | 0.0 | 100.0 | 0.0 | 4220 |
| Lard, refined | 0.0 | 100.0 | 0.0 | 4220 |
| Marrow, maximum | 3.2 | 84.5 | 0.0 | 4095 |
| Suet of beef | 7.5 | 94.5 | 0.0 | 4010 |
| Salt pork, clear fat | 5.0 | 94.1 | 0.0 | 3975 |
| Ham fat | 3.7 | 89.2 | 0.0 | 3825 |
| Butter | 1.0 | 85.0 | 0.0 | 3410 |
| Bacon, smoked | 9.9 | 67.4 | 0.0 | 3030 |
| Salt pork, lean | 8.4 | 67.1 | 0.0 | 2985 |
| Prepared cocoanut | 6.3 | 57.4 | 31.3 | 2865 |
| Chocolate | 12.9 | 48.7 | 30.3 | 2625 |
| Peanuts | 19.5 | 29.1 | 18.5 | 1775 |
| Ham, smoked | 14.2 | 33.4 | 0.0 | 1635 |

### FRUITS, DRIED FRUITS, FLOUR, BREAD, CEREALS, VEGETABLES, NUTS

High in calorie value, or fuel value, see first ten articles of each under classified lists. Low calorie values in the above list will be found at the close of each list.

| DAIRY PRODUCTS | Protein Pct. | Fats Pct. | Carbohy. Pct. | Water Pct. | Ash Pct. | Calories | Hrs. Dig. |
|---|---|---|---|---|---|---|---|
| Butter | 1.0 | 85.0 | 0.0 | 11 | 3.0 | 3410 | 3.0 |
| Cheese, Swiss | 27.6 | 34.9 | 1.3 | 31.4 | 4.8 | 2010 | 4.0 |
| Cheese, full cream | 25.9 | 33.7 | 2.4 | 34 | 3.8 | 1950 | 3.7 |
| Cheese, California | 24.0 | 33.0 | 4.5 | 34 | 3.8 | 1945 | 3.7 |
| Cheese, Roquefort | 22.6 | 29.5 | 1.8 | 39 | 6.8 | 1700 | |
| Cheese, Limburger | 23.0 | 29.4 | .4 | 42 | 5.1 | 1675 | |
| Cheese, Neufchatel | 18.7 | 27.4 | 1.5 | 50.0 | 2.4 | 1530 | |
| Milk, condensed sweet | 8.8 | 8.3 | 1.9 | 50.9 | 1.9 | 1520 | |
| Cream | 2.5 | 18.3 | 4.5 | 74 | .5 | 910 | 2.2 |
| Milk, cond. not sweet | 9.6 | 9.3 | 11.2 | 68 | 1.7 | 780 | |
| Milk, whole | 3.3 | 4.0 | 5.0 | 87 | .7 | 325 | 2.2 |
| Milk, skimmed | 3.4 | .3 | 5.1 | 90 | .7 | 170 | 2.0 |
| Buttermilk | 3.0 | .3 | 4.8 | 91 | .7 | 165 | 2.0 |

### Table No. 3

### AMOUNT OF FOODS CONTAINING 60 GRAMS (2 OUNCES) OF PROTEIN

The basis of this table was prepared by Prof. Russel H. Chittenden of Yale.

The amounts are given here in ounces instead of in pounds, for two pounds or less. The table has been rearranged as per food values in calories.

| | Calories | Protein, grams |
|---|---|---|
| 8 Ounces salt boneless codfish | 245 | 60 |
| 8 Ounces fresh lean beef, loin | 308 | 60 |
| 12 Ounces halibut steak | 423 | 60 |
| 12 Ounces of fresh liver | 432 | 60 |
| 36 Ounces of fresh oysters, solid | 506 | 60 |
| 13 Ounces of sweetbread (brains) | 660 | 60 |
| 9 Hen's eggs | 720 | 60 |
| 8 Ounces of dried peas | 827 | 60 |
| 10 Ounces of dried beans | 963 | 60 |
| 11 Pounds of lettuce | 990 | 60 |
| 8 Ounces of American pale cheese | 1027 | 60 |
| 30 Ounces of baked beans | 1125 | 60 |
| 4 Pounds whole milk (two quarts) | 1300 | 60 |
| 21 Ounces of white bread | 1520 | 60 |
| 13 Ounces of uncooked oatmeal | 1550 | 60 |

| | Calories | Protein, grams |
|---|---|---|
| 16 Ounces of uncooked macaroni | 1665 | 60 |
| 14 Ounces of lean smoked bacon | 1820 | 60 |
| 12 Ounces of almonds | 2020 | 60 |
| 20 Ounces of shredded wheat | 2125 | 60 |
| 20 Ounces of crackers | 2381 | 60 |
| 28 Ounces of flaked rice | 2807 | 60 |
| 23 Ounces of peanuts | 3584 | 60 |
| 10 Pounds of grapes | 4500 | 60 |
| 10 Pounds of bananas | 4600 | 60 |
| 15 Pounds of prunes | 5550 | 60 |
| 33 Pounds of apples | 9570 | 60 |

### Table No. 4

### AMOUNTS OF FOOD AND ENERGY PURCHASED FOR TEN CENTS

| FOOD MATERIALS | Price Per lb. | Amount Pounds | Cost 1000 Cal. Cents | Protein Pound | Fat Pound | Carbo. Pound | Calories Purchased | Cost Pound Protein |
|---|---|---|---|---|---|---|---|---|
| Wheat flour | 2.5 | 4.00 | 2 | .39 | .04 | 2.94 | 6540 | $0.26 |
| Cornmeal gran | 2.5 | 4.00 | 2 | .31 | .07 | 2.96 | 8540 | .32 |
| Oatmeal | 4.0 | 2.50 | 2 | .34 | .16 | 1.66 | 4500 | .29 |
| Beans, white, dry | 5.0 | 1.00 | 3 | .35 | .30 | 1.16 | 3040 | .29 |
| Sugar | 6.0 | 1.67 | 3 | .00 | .00 | 1.67 | 2920 | .00 |
| Wheat bread | 5.0 | 1.00 | 4 | .16 | .02 | 1.64 | 2400 | .64 |
| Pork, fat salt | 12.0 | .83 | 3 | .02 | .68 | 0.0 | 2950 | 6.67 |
| Oat breakfast food | 7.5 | 1.33 | 4 | .19 | .09 | .86 | 2393 | .53 |
| Rye bread | 5.0 | 2.00 | 4 | .15 | .01 | 1.04 | 2340 | .65 |
| Wheat breakfast food | .75 | 1.33 | 4 | .13 | .07 | .98 | 2235 | .75 |
| Rice, best grade | 8.0 | 1.25 | 5 | .08 | .09 | .97 | 2025 | 1.18 |
| Butter | 25.0 | .40 | 7 | .00 | .32 | 0.0 | 1365 | 25.00 |
| Apples | 1.5 | 6.67 | 8 | .02 | .02 | .65 | 1270 | 5.00 |
| Turnips | 1.0 | 10.00 | 8 | .08 | .01 | .54 | 1200 | 1.33 |
| Cheese | 16.0 | .65 | 8 | .16 | .20 | .03 | 1185 | .64 |
| Mackerel | 10.0 | 1.00 | 9 | .13 | .20 | 0.0 | 1135 | .74 |
| Roast pork loin | 12.0 | .83 | 10 | .11 | .19 | 0.0 | 1035 | .92 |
| Ham, smoked | 22.0 | .45 | 13 | .06 | .14 | 0.0 | 735 | 1.00 |
| Mutton, ch. loin | 16.0 | .63 | 11 | .08 | .17 | 0.0 | 890 | 1.22 |
| Milk, 7 cts. qt. | 3.5 | 2.85 | 11 | .09 | .11 | .14 | 885 | 1.09 |
| Beef, round | 16.0 | .63 | 18 | .11 | .08 | 0.0 | 560 | .87 |
| Beef, sirloin | 20.0 | .50 | 20 | .08 | .06 | 0.0 | 513 | 1.28 |
| Beef, shoulder | 12.0 | .83 | 17 | .13 | .08 | 0.0 | 595 | 1.75 |
| Mutton, leg | 16.0 | .63 | 11 | .08 | .09 | 0.0 | 560 | 1.10 |

### AMOUNTS OF FOOD AND ENERGY PURCHASED FOR TEN CENTS

| | Price Per lb. | Amount Pounds | Cost 1000 Cal. Cents | Protein Pound | Fat Pound | Carbo. Pound | Calories Purchased | Cost Pound Protein |
|---|---|---|---|---|---|---|---|---|
| Eggs, 34c doz. | 16.0 | .83 | 26 | .07 | .06 | 0.0 | 385 | 1.39 |
| Cabbage | 2.5 | 4.0 | 22 | .05 | .01 | .18 | 460 | 2.08 |
| Bananas | 7.0 | 1.43 | 27 | .001 | .01 | .18 | 370 | 10.08 |
| POULTRY | | | | | | | | |
| Chicken | 20.0 | 0.57 | 26 | .08 | .08 | 0.0 | 497 | 1.20 |
| Goose | 28.0 | 0.36 | 21 | .05 | .09 | 0.0 | 475 | 1.94 |
| Turkey | 28.0 | 0.36 | 27 | .07 | .05 | 0.0 | 369 | 1.52 |
| Chicken, roasting | 25.0 | 0.40 | 39 | .07 | .03 | 0.0 | 255 | 1.45 |
| Squab | 58.0 | 0.17 | 54 | .03 | .03 | 0.0 | 184 | 3.82 |
| Quail | 40.0 | 0.25 | 59 | .05 | .01 | 0.0 | 170 | 1.85 |
| NUTS | | | | | | | | |
| Cocoanut | 5.0 | 2.00 | 027 | .08 | .73 | .29 | 3662 | 1.16 |
| Peanuts | 7.0 | 1.43 | 038 | .31 | .45 | .20 | 2767 | .32 |
| Hickory Nuts | 9.0 | 1.11 | 071 | .06 | .38 | .04 | 1404 | 1.55 |
| Walnuts | 20.0 | .50 | 16 | .04 | .13 | .03 | 633 | 2.26 |
| Brazil nuts | 20.0 | .50 | 126 | .04 | .16 | .14 | 789 | 2.26 |
| Chestnuts | 8.0 | 1.25 | 083 | .07 | .06 | .44 | 1196 | 1.48 |
| Almonds | 20.0 | .50 | 13 | .06 | .14 | .14 | 767 | 1.76 |
| Peanut Butter | 20.0 | .50 | 071 | .15 | .23 | .09 | 1412 | .68 |

### Table No. 5

### RELATIVE FOOD CONSUMPTION OF INDIVIDUALS, CLASSES, NATIONALITIES—HIGH FOOD STANDARDS ACTUALLY USED.

| | Calories Fuel Val. | Proteins Grams | Fats Grams | Carbohy. Grams | No. Tests |
|---|---|---|---|---|---|
| Football team University California | 7885 | 270 | 416 | 710 | |
| Football teams Connecticut & California | 6390 | 226 | 354 | 815 | 2 |
| Bicyclists in New York | 5005 | 186 | 183 | 651 | 3 |
| Swedish mechanics | 4580 | 189 | 110 | 714 | 5 |
| Prussian machinists | 4270 | 139 | 113 | 677 | 1 |
| Chinese farm laborers, California | 3980 | 144 | 95 | 640 | 1 |
| Rowing clubs in New England | 3955 | 155 | 157 | 440 | 7 |
| United States army ration, peace | 3730 | 120 | 161 | 454 | |
| Laborers' families in United States | 3925 | 120 | 147 | 534 | 2 |
| College clubs in United States | 3580 | 107 | 148 | 450 | 15 |
| Farmers' families Eastern United States | 3415 | 97 | 130 | 467 | 10 |

## RELATIVE FOOD CONSUMPTION OF INDIVIDUALS, CLASSES, NATIONALITIES—HIGH FOOD STANDARDS ACTUALLY USED.

| | Calories Fuel Val. | Proteins Grams | Fats Grams | Carbohy. Grams | No. Tests |
|---|---|---|---|---|---|
| Negro families Alabama and Virginia | 3395 | 86 | 145 | 440 | 39 |
| Mexican families in New Mexico | 3460 | 94 | 71 | 613 | 4 |
| Mechanics' families in United States | 3355 | 103 | 150 | 402 | 14 |
| Laborers' families in large cities, U. S. | 2810 | 101 | 116 | 344 | 12 |
| German army ration in peace | 2725 | 114 | 39 | 480 | |
| PROFESSIONAL MEN | | | | | |
| Lawyers, teachers, etc., United States | 3220 | 104 | 125 | 423 | 14 |
| College clubs in United States | 3580 | 107 | 148 | 459 | 15 |
| German physicians | 2680 | 131 | 95 | 327 | 2 |
| Japanese professor | 2345 | 123 | 21 | 416 | 1 |
| FAMILIES IN POOR CIRCUMSTANCES | | | | | |
| Poor families in New York City | 2845 | 93 | 95 | 407 | 11 |
| Laborers' families in Pittsburgh | 2400 | 80 | 95 | 308 | 2 |
| German laborer's family | 1640 | 52 | 32 | 287 | 1 |
| Italian mechanics | 2225 | 76 | 38 | 396 | 5 |
| MEN WITH PRACTICALLY NO EXERCISE | | | | | |
| American men in respiration calorimeter | 2380 | 112 | 80 | 305 | 11 |
| German men in respiration calorimeter | 2430 | 127 | 80 | 302 | 5 |
| DIETARY STANDARDS HIGH | | | | | |
| Man at very hard muscular work (Atwater) | 5500 | 175 | 175 | 540 | |
| Man at hard muscular work (Atwater) | 4150 | 150 | 150 | 500 | |
| Man at hard muscular work (Voit) | 3207 | 145 | 100 | 450 | |
| Man at hard muscular labor (Playfair) | 3748 | 185 | 71 | 568 | |
| Man with moderate muscular work (Atwater) | 3400 | 125 | 125 | 450 | |
| Man at moderate muscular work (Voit) | 2965 | 118 | 56 | 500 | |
| Man at moderate muscular work (Playfair) | 3139 | 119 | 51 | 531 | |
| Man at light muscular work (Atwater) | 2820 | 100 | 100 | 360 | |
| Man at sedentary work (Atwater) | 2700 | 100 | 100 | 360 | |
| Woman at moderate work (Atwater) | 2700 | 100 | 100 | 360 | |
| Woman at light work (Atwater) | 2450 | 90 | 80 | 300 | |
| Man without muscular work (Atwater) | 2450 | 90 | 80 | 300 | |
| Man aged (Atwater) | 2477 | 100 | 68 | 350 | |

## RELATIVE FOOD CONSUMPTION OF INDIVIDUALS, CLASSES, NATIONALITIES—HIGH FOOD STANDARDS ACTUALLY USED.

| | Calories Fuel Val. | Proteins Grams | Fats Grams | Carbohy. Grams | No. Tests |
|---|---|---|---|---|---|
| Woman aged (Atwater) | 1859 | 80 | 50 | 260 | |
| Children six to fifteen years (Atwater) | 2041 | 75 | 43 | 325 | |
| Children two to six years (Atwater) | 1418 | 55 | 40 | 200 | |
| Children up to 18 months (Atwater) | 767 | 28 | 37 | 767 | |

Compiled from Farmers Bulletin 142 U. S. Department of Agriculture "Principles of Nutrition and Nutritive Value of Food" by W. O. Atwater, Ph.D. 1910.

# CHEMICAL COMPOSITION OF OUR FOOD SUPPLY

## AVERAGE COMPOSITION

| FOOD MATERIAL (as purchased) | Protein Pct. | Fat Pct. | Carbohydrate Pct. | Refuse Pct. | Water Pct. | Ash Pct. | Fuel Val. per pound Calories |
|---|---|---|---|---|---|---|---|
| FRUITS, DRIED | | | | | | | |
| Raspberries | 1.8 | 1.8 | 80.2 | 0.0 | 8.1 | 2.6 | 1705 |
| Pears | 2.8 | 5.4 | 72.9 | 0.0 | 16.5 | 2.4 | 1635 |
| Dates | 2.1 | 2.8 | 78.4 | 10.0 | 15.4 | 1.3 | 1615 |
| Zante Currants (Eng.) | 2.6 | 3.3 | 16.1 | 10.0 | 14.6 | 3.4 | 1605 |
| Citron | .5 | 1.5 | 78.1 | 0.0 | 19.5 | .9 | 1525 |
| Figs | 4.3 | .3 | 74.2 | 0.0 | 18.8 | 2.4 | 1475 |
| Prunes | 2.1 | 0.0 | 73.3 | 15.0 | 22.3 | 2.3 | 1400 |
| Apples | 1.6 | 2.2 | 68.1 | 0.0 | 26.1 | 2.0 | 1350 |
| Apricots | 4.7 | 1.0 | 62.5 | 0.0 | 29.4 | 2.4 | 1290 |
| Bananas | 5.3 | 2.3 | 57.9 | 0.0 | 29.2 | 5.3 | 1240 |
| FRUITS—FRESH | | | | | | | |
| Avocado—Alligator pear | 1.1 | 10.2 | 6.8 | 29.0 | 81.1 | .9 | 512 |
| Persimmons | .8 | .7 | 29.5 | 25.0 | 66.1 | .9 | 630 |
| Bananas, fresh | 1.3 | .6 | 22.0 | 35.0 | 75.2 | .8 | 460 |
| Pomegranates | 1.5 | 1.6 | 19.5 | 30.0 | 76.8 | .8 | 460 |
| Grapes | 1.3 | 1.6 | 19.9 | 25.0 | 77.4 | .5 | 450 |
| Olives | 2.5 | 17.1 | 9.1 | 67.0 | 10.1 | 4.4 | 407 |
| Plums | 5.0 | 1.0 | 21.1 | 0.0 | 73.4 | .5 | 395 |
| Whortleberries | .7 | 3.0 | 13.5 | 0.0 | 82.4 | .4 | 390 |
| Figs | 1.5 | 0.0 | 18.8 | 0.0 | 79.1 | .6 | 380 |
| Cactus fruit | 1.4 | 1.3 | 15.4 | 0.0 | 79.2 | 2.7 | 375 |
| Currants, black | .3 | .3 | 19.2 | 0.0 | 79.0 | 1.0 | 370 |
| Cherries | 1.0 | .8 | 16.7 | 5.0 | 80.9 | .6 | 365 |
| Huckleberries | .6 | .6 | 16.6 | 0.0 | 81.9 | .3 | 345 |
| Guavas | 1.3 | .7 | 14.6 | 0.0 | 82.9 | .5 | 315 |
| Raspberries, black | 1.7 | 1.0 | 12.6 | 0.0 | 84.1 | .6 | 310 |
| Raisins | 2.6 | 0.0 | 74.0 | 0.0 | 14.0 | 25.0 | 1605 |
| Nectarines | .6 | 0.0 | 15.9 | 6.6 | 82.9 | .6 | 305 |
| Apples | .4 | .5 | 14.2 | 25.0 | 84.6 | .3 | 290 |
| Mulberries | .4 | 0.0 | 14.3 | 0.0 | 84.7 | .6 | 280 |
| Apricots | 1.1 | 0.0 | 13.4 | 46.0 | 85.5 | .5 | 270 |
| Blackberries | 1.3 | 1.0 | 10.9 | 0.0 | 86.3 | .5 | 270 |
| Currants | 1.5 | 0.0 | 12.8 | 0.0 | 85.0 | .7 | 265 |

| FOOD MATERIAL (as purchased) | Protein Pct. | Fat Pct. | Carbohydrate Pct. | Refuse Pct. | Water Pct. | Ash Pct. | Fuel Val. per pound Calories |
|---|---|---|---|---|---|---|---|
| Raspberries | 1.0 | 0.0 | 12.6 | 0.0 | 85.8 | .6 | 255 |
| Gooseberries | 1.0 | 0.0 | 13.1 | 0.0 | 85.6 | .3 | 255 |
| Oranges | .8 | .2 | 11.6 | 27.0 | 86.9 | .5 | 240 |
| Mango | .6 | .4 | 11.1 | 40.0 | 87.4 | .5 | 220 |
| Cranberries | .4 | .6 | 9.9 | 0.0 | 88.9 | .2 | 215 |
| Lemons | 1.1 | .7 | 8.5 | 30.0 | 89.3 | .5 | 205 |
| Pineapple | .4 | .3 | 0.0 | 40.0 | 89.3 | .3 | 200 |
| Peaches | .7 | .1 | 9.4 | 18.0 | 89.4 | .4 | 190 |
| Muskmelon | .6 | 0.0 | 9.3 | 50.0 | 89.5 | .6 | 185 |
| Strawberries | 1.0 | .6 | 7.4 | 5.0 | 90.4 | .6 | 180 |
| Persimmons, Japanese | 1.4 | .6 | 17.2 | 24.0 | 80.2 | .6 | 174 |
| Watermelon | .4 | .2 | 6.7 | 59.4 | 92.4 | .3 | 140 |
| Rhubarb stocks | .6 | .7 | 3.6 | 40.0 | 94.2 | .7 | 105 |

These figures on the Chemical Composition of food are taken by permission from Farmers Bulletin No. 293, issued by United States Department of Agriculture, on "Use of Fruit as Food." Prepared by C. F. Langworth, in charge of "Nutrition Investigation in Office of Experiment Station."

## CEREALS

### FLOURS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Oatmeal | 16.7 | 7.3 | 62.2 | | 7.7 | 2.1 | 1800 |
| Wheat breakfast food | 12.1 | 1.8 | 75.2 | | 9.6 | 1.3 | 1680 |
| Starch | | | 90.0 | | | | 1675 |
| Tapioca | .4 | .1 | 88.0 | | 11.4 | .1 | 1650 |
| Entire wheat flour | 13.8 | 1.9 | 71.9 | | 11.4 | 1.0 | 1650 |
| Macaroni, vermicelli | 13.4 | .9 | 74.1 | | 10.3 | 1.3 | 1645 |
| Graham flour | 13.3 | 2.2 | 71.4 | | 11.3 | 1.8 | 1645 |
| White flour, pat. proc. | 14.0 | 1.9 | 71.2 | | .12 | .9 | 1640 |
| White "high gr." | 11.4 | 1.0 | 75.1 | | 12.0 | .5 | 1635 |
| Cornmeal | 9.2 | 1.9 | 75.4 | | 12.5 | 1.0 | 1635 |
| Rice | 8.0 | 0.3 | 79.0 | | 12.3 | .4 | 1620 |

### BREAD, PASTRY, CRACKERS AND CAKES

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vanilla wafers | 6.6 | 14.0 | 71.6 | | 1.1 | 1.1 | 2045 | |
| Doughnuts | 69 | 21.0 | 53.1 | | 18.3 | .9 | 2000 | |
| Crackers, cream | 9.7 | 12.1 | 69.7 | | 6.8 | 1.7 | 1990 | |
| Crackers, oatmeal | 11.8 | 11.1 | 69.0 | | 6.3 | 1.8 | 1970 | 3.2 |
| Zweiback | 9.8 | 9.9 | 73.5 | | 5.8 | 1.0 | 1970 | |
| Crackers, oyster | 11.3 | 10.5 | 70.5 | | 4.8 | 2.9 | 1965 | 3.0 |
| Crackers, graham | 10.1 | 9.4 | 73.8 | | 5.4 | 1.4 | 1955 | 3.0 |
| Crackers, butter | 9.6 | 10.1 | 76.6 | | 7.2 | 1.5 | 1955 | |

| FOOD MATERIAL (as purchased) | Protein Pct. | Fat Pct. | Carbohydrate Pct. | Refuse Pct. | Water Pct. | Ash Pct. | Fuel Val. per pound Calories | |
|---|---|---|---|---|---|---|---|---|
| Crackers, soda | 9.8 | 9.1 | 73.1 | | 5.9 | 2.1 | 1925 | |
| Cookies | 7.0 | 10.2 | 73.2 | | 8.3 | 1.3 | 1920 | |
| Crackers, wafer | 8.7 | 8.6 | 74.25 | | 6.6 | 1.6 | 1910 | |
| Cakes, miscellaneous | 7.6 | 9.0 | 74.0 | | 8.2 | 1.2 | 1900 | |
| Ginger snaps | 6.5 | 8.5 | 76.0 | | 2.6 | 2.6 | 1895 | |
| Cake, fruit | 5.9 | 10.9 | 64.1 | | 17.3 | 1.8 | 1760 | 3.5 |
| Biscuit, soda | 9.3 | 13.7 | 52.6 | | 11.5 | 1.5 | 1730 | 4.5 |
| Pretzels | 9.7 | 3.9 | 72.8 | | 9.6 | 4.0 | 1700 | 3.5 |
| Lady fingers | 8.8 | 5.0 | 70.6 | | 15.0 | .6 | 1685 | 3.5 |
| Fig bars | 4.6 | 6.6 | 69.8 | | 17.9 | 1.1 | 1660 | 3.5 |
| Biscuit, Maryland | 8.4 | 5.6 | 60.1 | | | 1.3 | 1510 | 4.5 |
| Sugar buns | 8.1 | 6.9 | 54.2 | | | 1.2 | 1450 | 3.5 |
| Bread, toasted | 11.5 | 1.6 | 61.2 | | 24.0 | 1.1 | 1420 | 2.3 |
| French rolls | 8.5 | 2.5 | 55.7 | | 32.0 | 1.3 | 1300 | 3.0 |
| Bread, white | 10.9 | 1.3 | 53.6 | | 33.2 | 1.0 | 1255 | 3.2 |
| Bread, Vienna | 9.4 | 1.2 | 54.1 | | 34.3 | 1.1 | 1230 | 3.3 |
| Bread, graham | 8.9 | 1.8 | 52.1 | | 35.7 | 1.5 | 1210 | 3.7 |
| Bread, corn | 7.9 | 4.7 | 46.5 | | 38.9 | 2.2 | 1205 | 3.0 |
| Bread, rye | 9.0 | .6 | 53.2 | | 35.7 | 1.5 | 1180 | 3.7 |
| Bread, gluten | 9.3 | 1.4 | 49.8 | | 38.4 | 1.3 | 1140 | 3.5 |
| Bread, whole wheat | 9.7 | .9 | 40.7 | | 38.4 | 1.3 | 1130 | 3.3 |
| Graham gems | 8.9 | 10.4 | 41.8 | | 39.7 | 1.3 | 1100 | 3.2 |
| PIES | | | | | | | | |
| Apple pie | 3.1 | 9.9 | 43.0 | | 42.0 | .8 | 1297 | |
| Pumpkin pie | 4.6 | 6.6 | 48.1 | | 39.5 | .2 | 1281 | |
| Lemon pie | 3.6 | .2 | 31.5 | | 48.6 | .1 | 1195 | |
| Blackberry | 4.4 | 3.9 | 47.2 | | 47.5 | .5 | 1128 | |
| Cherry pie | 4.6 | 3.7 | 47.2 | | 43.0 | .5 | 1121 | |
| Blueberry pie | 4.4 | 4.8 | 42.5 | | 46.8 | .6 | 1044 | |
| Custard pie | 4.2 | 16.3 | 25.4 | | 63.9 | .2 | 833 | |
| NUTS | | | | | | | | |
| Prepared cocoanut | 6.3 | 57.4 | 31.5 | | 2.7 | 1.3 | 2865 | |
| Almonds | 11.5 | 30.2 | 9.5 | 45.0 | 2.7 | 1.1 | 1515 | |
| Peanuts | 19.5 | 29.1 | 18.5 | 24.5 | 6.9 | 1.5 | 1775 | |
| Brazil nuts | 8.6 | 33.7 | 3.5 | 49.6 | 2.6 | 2.0 | 1485 | |
| Pecans | 5.2 | 33.3 | 6.2 | 53.2 | 1.4 | .7 | 1465 | |
| Filberts | 7.2 | 31.3 | 6.2 | 52.1 | 1.8 | 1.1 | 1430 | |
| Walnuts, English | 6.9 | 26.9 | 6.8 | 58.1 | 1.0 | .6 | 1250 | |

| FOOD MATERIAL (as purchased) | Protein Pct. | Fat Pct. | Carbohydrate Pct. | Refuse Pct. | Water Pct. | Ash Pct. | Fuel Val. per pound Calories |
|---|---|---|---|---|---|---|---|
| Chestnuts, fresh | 5.2 | 4.5 | 35.4 | 16.0 | 37.8 | 1.1 | 915 |
| Walnuts, black | 7.2 | 14.6 | 3.0 | 74.1 | .6 | .5 | 730 |
| Cocoanut, fresh | 2.9 | 25.9 | 14.3 | 48.8 | 7.2 | .9 | 1295 |
| Chestnuts, dried | 8.1 | 5.3 | 56.4 | 24.0 | 4.5 | 1.7 | 1385 |

| VEGETABLES FRESH | Protein Pct. | Fat Pct. | Carbohy. Pct. | Water Pct. | Ash Pct. | Calories | Time of Digest. Hours |
|---|---|---|---|---|---|---|---|
| Potato chips | 6.8 | 39.8 | 46.7 | 2.2 | 4.5 | 2675 | |
| Chili peppers (red) | 9.4 | 7.7 | 70.0 | 7.0 | 7.6 | 1800 | |
| Frijoles (brown beans) | 21.9 | 1.3 | 65.1 | 75.0 | 4.2 | 1675 | 3.0 |
| Peas, dried | 24.3 | 1.0 | 62.0 | 9.5 | 2.9 | 1665 | |
| Lima beans, dry | 18.1 | 1.3 | 65.9 | 10.4 | 4.1 | 1625 | |
| Beans, dry | 25.5 | 1.8 | 59.6 | 12.6 | 3.5 | 1605 | 2.5 |
| Lentils | 25.7 | 1.0 | 59.2 | 8.4 | 5.7 | 1620 | 3.7 |
| Potatoes, sweet | 3.0 | 2.1 | 42.1 | | .9 | 925 | 3.5 |
| Beans, baked | 6.9 | 2.5 | 19.6 | 68.9 | | 600 | 3.7 |
| Peas, green | 7.7 | .5 | 16.9 | 75.1 | .9 | 540 | 3.5 |
| Corn, green | 3.1 | 1.1 | 19.7 | 75.4 | .9 | 470 | 3.7 |
| Potatoes, baked | 2.4 | .1 | 24.9 | 71.2 | | 525 | 2.5 |
| Beans, lima green | 7.1 | .7 | 22.0 | 68.5 | 1.7 | 570 | |
| Potatoes, boiled | 2.5 | .1 | 20.9 | 75.5 | 1.0 | 444 | 3.2 |
| Parsnips | 1.6 | .5 | 13.5 | 83.0 | 1.4 | 300 | |
| Spinach, cooked | 2.1 | .3 | 3.2 | 89.8 | 1.4 | 260 | 3.0 |
| Onions, raw | 1.6 | .3 | 9.9 | 87.5 | .6 | 225 | 3.0 |
| Beets | 1.6 | .1 | 9.7 | 87.5 | 1.1 | 215 | 3.0 |
| Carrots | 1.1 | .4 | 9.3 | 88.2 | | 210 | 3.5 |
| Beans, string | 2.3 | .3 | 7.4 | 89.2 | .8 | 195 | 2.5 |
| Turnips | 1.3 | .2 | 8.1 | 89.6 | .8 | 185 | 4.5 |
| Cabbage, raw | 1.6 | .3 | 5.6 | 91.5 | 1.0 | 145 | 2.5 |
| Cauliflower | 1.8 | .3 | 4.7 | 92.0 | .7 | 140 | 2.5 |
| Radishes | 1.2 | .1 | 5.8 | 89.3 | 1.0 | 135 | 3.6 |
| Egg plant | 1.2 | .3 | 5.1 | 91.5 | .5 | 130 | 3.5 |
| Sauerkraut | 1.7 | .5 | 3.8 | 38.8 | 5.2 | 125 | 3.5 |
| Tomatoes, raw | .9 | .1 | 3.9 | 94.3 | .5 | 105 | 2.2 |
| Asparagus | 1.8 | .2 | 2.3 | 94.0 | 1.7 | 105 | 2.5 |
| Lettuce | 1.2 | .3 | 2.9 | 94.6 | .9 | 90 | 2.5 |
| Celery, raw | 1.1 | .1 | 3.3 | 94.5 | 1.0 | 85 | 3.5 |
| Cucumber | .8 | .2 | 3.1 | 95.4 | .5 | 80 | 4.0 |
| Cucumber pickles | .5 | .3 | 2.7 | 92.9 | 3.6 | 70 | 6.0 |

| SOUPS | Protein Pct. | Fat Pct. | Carbohy. Pct. | Water Pct. | Ash Pct. | Calories | Time of Digest. Hours |
|---|---|---|---|---|---|---|---|
| Beef soup | 4.4 | .4 | 1.1 | 92.9 | 1.2 | 120 | 2.3 |
| Bean soup | 3.2 | 1.4 | 9.4 | 84.3 | 2.0 | 295 | 2.0 |
| Barley, cream of | 2.4 | 2.5 | 8.9 | 84.8 | 1.2 | 320 | 2.5 |
| Bouillon | 0.2 | 0.1 | 0.2 | 96.5 | 0.9 | 50 | 2.0 |
| Chicken soup | 10.5 | .8 | 2.4 | 84.0 | 2.0 | 275 | 2.0 |
| Celery soup, cream of | 2.6 | 2.0 | 6.0 | 90.0 | 1.0 | 280 | 2.5 |
| Clam chowder | 1.8 | .8 | 6.7 | 88.7 | 2.0 | 195 | 2.6 |
| Consomme | 2.5 | .0 | .4 | 96.0 | 1.1 | 55 | 2.0 |
| Corn, cream of | 2.5 | 1.9 | 7.8 | 87.0 | 1.0 | 270 | 2.3 |
| Onion soup, cream of | 2.7 | 2.2 | 9.0 | 86.0 | 1.5 | 320 | 2.0 |
| Oxtail soup | 3.7 | .1 | 5.7 | 89.3 | 1.2 | 180 | 2.4 |
| Oyster soup | 2.3 | 5.0 | 2.3 | 85.0 | 1.3 | 107 | 3.0 |
| Pea soup | 3.6 | .7 | 7.6 | 86.9 | 1.2 | 170 | 2.5 |
| Pea soup, cr. of green | 2.6 | 2.7 | 5.7 | 87.7 | 1.3 | 270 | 2.0 |
| Potato soup, cream of | 2.5 | 2.2 | 11.0 | 85.0 | 1.2 | 335 | 2.6 |
| Tomato soup | 1.8 | 1.1 | 5.6 | 90.0 | 1.5 | 185 | 2.0 |
| Tomato soup, cream of | 2.2 | 2.3 | 4.7 | 88.0 | 1.5 | 288 | 2.2 |
| Vegetable soup | 1.8 | 2.0 | 8.0 | 88.0 | 1.3 | 270 | 2.0 |
| Mock turtle soup | 5.2 | .2 | 2.8 | 80.8 | 1.4 | 210 | 2.5 |
| Turtle soup, green | 6.1 | 1.9 | 3.9 | 86.6 | 1.5 | 265 | 2.5 |

| Meats | Edible Portion | | | Average Composition | | | Time of |
|---|---|---|---|---|---|---|---|
| | Protein | Fat | Carbohy. | Water | Ash | Calories | Digest. |
| BEEF, VERY LEAN | Pct. | Pct. | Pct. | Pct. | Pct. | Fuel Val. | Hours |
| Plate | 28.8 | 7.7 | 00.0 | 69.1 | 1.1 | 750 | 3.5 |
| Rump | 23.0 | 5.1 | 00.0 | 71.9 | 1.2 | 645 | 3.5 |
| Shank, hind | 21.9 | 5.4 | 00.0 | 72.5 | 1.0 | 635 | 3.5 |
| Flank | 25.9 | 3.3 | 00.0 | 70.7 | 1.2 | 620 | 3.5 |
| Loin | 24.6 | 3.7 | 00.0 | 70.8 | 1.3 | 615 | 3.0 |
| Ribs | 25.0 | 3.5 | 00.0 | 70.0 | 1.3 | 615 | 3.0 |
| Shoulder | 22.3 | 3.9 | 00.0 | 73.8 | 1.0 | 580 | 3.5 |
| Neck | 22.5 | 3.2 | 00.0 | 73.2 | 1.1 | 555 | 3.5 |
| Round | 22.6 | 2.8 | 00.0 | 73.6 | 1.3 | 540 | 3.5 |
| BEEF, LEAN | | | | | | | |
| Plate | 15.6 | 18.8 | 00.0 | 65.9 | .7 | 1085 | 4.5 |
| Rump | 20.0 | 13.7 | 00.0 | 65.7 | 1.0 | 965 | 4.5 |
| Loin | 19.7 | 12.7 | 00.0 | 67.0 | 1.0 | 900 | 4.0 |
| Ribs | 19.6 | 12.0 | 00.0 | 67.9 | 1.0 | 870 | 4.0 |
| Flank | 20.8 | 11.3 | 00.0 | 61.8 | 1.0 | 865 | 4.5 |
| Round | 21.3 | 7.9 | 00.0 | 70.0 | 1.1 | 730 | 4.5 |

| Meats | Edible Portion | | | Average Composition | | | Time of |
|---|---|---|---|---|---|---|---|
| | Protein Pct. | Fat Pct. | Carbohy. Pct. | Water Pct. | Ash Pct. | Calories Fuel Val. | Digest. Hours |
| Shoulder | 20.2 | 11.3 | 00.0 | 61.8 | 1.0 | 720 | 4.5 |
| Shank, hind | 21.8 | 5.4 | 00.0 | 73.5 | 1.0 | 635 | 4.5 |
| BEEF, MEDIUM FAT | | | | | | | |
| Sirloin, top | 13.8 | 42.3 | 00.0 | 42.2 | .8 | 2100 | 4.5 |
| Plate | 14.6 | 39.8 | 00.0 | 45.2 | .8 | 1950 | 4.5 |
| Ribs | 17.5 | 26.6 | 00.0 | 55.5 | .9 | 1450 | 4.5 |
| Rump | 17.4 | 25.5 | 00.0 | 56.7 | .9 | 1400 | 4.5 |
| Loin, porterhouse | 21.9 | 20.4 | 00.0 | 60.0 | 1.0 | 1270 | 4.0 |
| Flank | 18.9 | 31.0 | 00.0 | 60.2 | .9 | 1240 | 4.0 |
| Loin, sirloin | 18.9 | 18.5 | 00.0 | 61.9 | 1.0 | 1130 | 4.0 |
| Loin, sirloin but | 17.7 | 17.7 | 00.0 | 62.5 | .9 | 1115 | 4.5 |
| Shoulder | 18.5 | 18.0 | 00.0 | 62.7 | 1.9 | 1105 | 4.5 |
| Round | 20.3 | 13.6 | 00.0 | 65.5 | 1.1 | 950 | 4.5 |
| Shank, hind | 20.9 | 11.5 | 00.0 | 67.8 | .9 | 875 | 4.5 |
| BEEF, VERY FAT | | | | | | | |
| Suet | 7.5 | 94.5 | 00.0 | 33.0 | .7 | 4010 | 4.5 |
| Marrow | 2.2 | 92.8 | 00.0 | 33.0 | 1.3 | 3955 | 4.5 |
| Clear fat | 4.1 | 00.0 | 00.0 | 13.4 | .4 | 3540 | 4.5 |
| Plate | 10.6 | 55.1 | 00.0 | 54.0 | .5 | 2526 | 4.5 |
| Flank | 14.0 | 51.8 | 00.0 | 34.7 | .7 | 2445 | 4.0 |
| Rump | 15.0 | 44.3 | 00.0 | 40.2 | .8 | 2150 | 3.5 |
| Ribs | 14.6 | 38.7 | 00.0 | 45.0 | .6 | 1905 | 3.5 |
| Loin | 18.9 | 38.8 | 00.0 | 51.3 | .9 | 1780 | 3.5 |
| Shoulder | 17.5 | 31.9 | 00.0 | 57.5 | .9 | 1670 | 3.5 |
| Round | 19.1 | 27.7 | 00.0 | 56.8 | .9 | 1490 | 4.0 |
| MUTTON, EDIBLE PORTION | | | | | | | |
| Loin, medium fat | 10.6 | 58.7 | 00.0 | 30.8 | .5 | 2675 | 3.2 |
| Fore quarter | 17.2 | 50.4 | 00.0 | 64.3 | 1.1 | 2350 | 3.3 |
| Chuck | 15.1 | 33.6 | 00.0 | 50.9 | .9 | 1700 | 3.2 |
| Leg of mutton | 17.3 | 23.8 | 00.0 | 48.2 | .9 | 1465 | 3.2 |
| LAMB, MEDIUM | | | | | | | |
| Shoulder | 18.1 | 29.7 | 00.0 | 51.8 | 1.0 | 1590 | 3.3 |
| Loin | 18.7 | 28.3 | 00.0 | 53.1 | 1.0 | 1540 | 3.2 |
| Leg of lamb M | 19.2 | 21.6 | 00.0 | 63.9 | 1.1 | 1055 | 3.2 |
| PORK, FRESH AND SALT | | | | | | | |
| Lard, refined | | 100.0 | | | | 4320 | 2.3 |
| Marrow, maximum | 3.2 | 84.5 | 00.0 | 16.7 | | 4095 | 2.3 |
| Salt pork, fat | 5.0 | 94.1 | 00.0 | 12.2 | .5 | 3975 | 6.0 |
| Ham fat, smoked | 3.7 | 89.2 | 00.0 | 10.2 | .2 | 3825 | 5.5 |
| Bacon, smoked | 9.9 | 67.4 | 00.0 | 18.8 | 4.4 | 3030 | 4.5 |

| Meats | Edible Portion | | | Average Composition | | | |
|---|---|---|---|---|---|---|---|
| | Protein Pct. | Fat Pct. | Carbohy. Pct. | Water Pct. | Ash Pct. | Calories Fuel Val. | Digest. Hours |
| Salt pork, lean | 8.4 | 67.1 | 00.0 | 19.9 | 5.7 | 2985 | 5.3 |
| Shoulder, smoked | 15.1 | 53.6 | 00.0 | 26.5 | 5.2 | 2545 | 5.3 |
| Ham, smoked fat | 14.8 | 52.3 | 00.0 | 27.9 | 3.7 | 2485 | 5.3 |
| Bacon, smoked lean | 15.5 | 42.0 | 00.0 | 31.8 | 11.0 | 2085 | 5.3 |
| Shoulder, fresh | 13.3 | 34.2 | 00.0 | 51.2 | .8 | 1690 | 5.0 |
| Ham, fresh medium | 15.3 | 28.9 | 00.0 | 53.9 | .8 | 1505 | 5.5 |
| Loin chop, fresh | 16.6 | 30.1 | 00.0 | 52.0 | 1.0 | 1580 | 4.5 |
| Tails | 14.8 | 77.1 | 00.0 | 17.4 | .3 | 3340 | 5.0 |
| MEAT, COOKED | | | | | | | |
| Ham, fresh, fried | 22.2 | 32.2 | 00.0 | 36.6 | 5.8 | 1815 | 5.5 |
| Lamb chops | 21.7 | 29.9 | 00.0 | 47.6 | 1.3 | 1665 | 3.5 |
| Roast beef | 22.3 | 28.6 | 00.0 | 48.2 | 1.3 | 1620 | 3.5 |
| Roast leg mutton | 25.0 | 22.6 | 00.0 | 50.9 | 1.2 | 1420 | 3.5 |
| Tongue, beef | 19.5 | 23.2 | 00.0 | 40.0 | 4.0 | 1340 | 4.5 |
| Ham, boiled | 20.2 | 22.4 | 00.0 | 51.3 | 6.1 | 1320 | 4.5 |
| Loin, tenderloin | 23.5 | 20.4 | 00.0 | 54.8 | 1.2 | 1300 | 5.0 |
| Corned beef | 26.3 | 18.7 | 00.0 | 00.0 | 4.0 | 1280 | 4.0 |
| Dried beef | 39.2 | 55.4 | 00.0 | 00.0 | 11.2 | 960 | 4.2 |
| Salmon, canned | 21.8 | 12.1 | 00.0 | 63.5 | 2.6 | 915 | 3.5 |
| Roast leg lamb | 19.7 | 12.7 | 00.0 | 67.1 | .8 | 900 | 3.5 |
| Round steak | 27.6 | 7.7 | 00.0 | 00.0 | 1.8 | 840 | 3.3 |
| Oysters, canned | 8.8 | 2.4 | 3.9 | 83.4 | 1.5 | 335 | 3.0 |
| FISH, FRESH AND SALT | | | | | | | |
| Mackerel, salt | 17.3 | 26.4 | 00.0 | 43.4 | 12.9 | 1435 | 3.3 |
| Sardines, canned | 23.0 | 19.7 | 00.0 | 52.3 | 5.6 | 1260 | 3.5 |
| Catfish, fresh | 14.4 | 20.6 | 00.0 | 64.1 | .9 | 1135 | 3.0 |
| Salmon, California | 17.8 | 17.8 | 00.0 | 63.6 | 1.1 | 1080 | 3.5 |
| Halibut, smoked | 20.7 | 15.0 | 00.0 | 49.4 | 15.0 | 1020 | 3.0 |
| Mackerel, Spanish | 21.5 | 9.4 | 00.0 | 68.1 | 1.5 | 795 | 3.3 |
| Shad, fresh | 18.8 | 9.5 | 00.0 | 70.6 | 1.3 | 750 | 2.5 |
| White fish | 22.9 | 6.5 | 00.0 | 69.8 | 1.6 | 700 | 2.2 |
| Perch, white | 19.3 | 4.0 | 00.0 | 75.7 | 1.2 | 530 | 2.5 |
| Brook trout | 19.2 | 2.1 | 00.0 | 77.8 | 1.2 | 445 | 2.5 |
| Sturgeon | 18.1 | 1.9 | 00.0 | 78.7 | 1.4 | 415 | 2.5 |
| Cod, salt | 25.4 | .3 | 00.0 | 53.5 | 24.7 | 410 | 3.3 |
| Pickerel and pike | 18.7 | .5 | 00.0 | 79.8 | 1.1 | 370 | 3.0 |
| Halibut, fresh | 15.3 | 4.4 | 00.0 | 61.9 | .9 | 454 | 3.0 |
| Average fresh fish | 10.9 | 2.4 | 00.0 | 44.6 | .7 | 300 | 3.0 |
| Lobsters, fresh | 5.9 | .7 | 00.0 | 30.7 | .8 | 141 | |

| Meats | Edible Portion | | | Average Composition | | | |
|---|---|---|---|---|---|---|---|
| | Protein Pct. | Fat Pct. | Carbohy. Pct. | Water Pct. | Ash Pct. | Calories Fuel Val. | Digest. Hours |
| Clams removed, shell.. | 10.6 | 5.2 | 5.2 | 80.8 | 2.3 | 331 | 4.0 |
| Sea bass, dressed......... | 10.5 | .2 | 00.0 | 42.2 | .7 | 200 | 2.5 |
| Oysters, fresh, solid...... | 6.0 | 1.3 | 3.3 | 88.3 | 1.1 | 222 | 3.0 |
| POULTRY AND GAME | | | | | | | |
| Goose, young ............... | 16.3 | 36.2 | 00.0 | 46.7 | .8 | 1830 | 4.5 |
| Turkey ......................... | 21.1 | 22.9 | 00.0 | 55.5 | 1.0 | 1360 | 2.5 |
| Turkey, roast ............... | 27.8 | 18.4 | 00.0 | 52.2 | 1.3 | 1295 | 2.5 |
| Duck ............................. | 18.3 | 19.0 | 00.0 | 61.1 | 1.5 | 1290 | 4.5 |
| Turkey, light meat...... | 25.7 | 9.4 | 00.0 | 63.9 | 1.3 | 1065 | 3.0 |
| Fowls, general ............... | 19.5 | 16.3 | 00.0 | 63.7 | 1.0 | 1043 | 3.5 |
| Quail (Sadler) ............ | 25.0 | 6.8 | 00.0 | 69.5 | 1.6 | 935 | |
| Broilers, fresh ............ | 20.7 | 8.3 | 00.0 | 69.7 | 1.1 | 890 | 2.5 |
| Chicken, fricasseed...... | 17.6 | 2.4 | 00.0 | 67.5 | 1.0 | 855 | 3.0 |
| VEAL, FRESH | | | | | | | |
| Loin ............................. | 10.9 | 10.8 | 00.0 | 69.0 | 1.8 | 825 | 3.2 |
| Leg of veal, medium.. | 20.3 | 9.0 | 00.0 | 70.0 | 1.3 | 755 | 3.2 |
| Breast of veal ............... | 19.5 | 14.0 | 00.0 | 66.1 | 1.0 | 955 | 3.2 |
| Venison ......................... | 19.7 | 1.9 | 00.0 | 77.3 | 1.1 | 443 | |
| Rabbit ......................... | 24.6 | 9.7 | 00.0 | 67.8 | 1.1 | 800 | 4.0 |
| Sweetbreads, general.. | 19.7 | 3.0 | 00.0 | 78.7 | 1.3 | 440 | 2.5 |
| DAIRY PRODUCTS | | | | | | | |
| Butter ......................... | 1.0 | 85.0 | 00.0 | 11.0 | 3.0 | 3605 | 3.0 |
| Cheese, Swiss ............... | 27.6 | 34.9 | 1.3 | 31.4 | 4.8 | 2010 | 3.5 |
| Cheese, California ...... | 24.0 | 33.0 | 4.5 | 34.0 | 3.8 | 1945 | 3.7 |
| Cheese, full cream........ | 25.9 | 33.7 | 2.4 | 34.0 | 3.8 | 1950 | 3.7 |
| Cheese, Limburger ...... | 33.0 | 29.4 | .4 | 34.0 | 3.8 | 1675 | |
| Cheese, Roquefort........ | 22.6 | 29.5 | 1.8 | 39.3 | 6.8 | 1700 | |
| Cheese, Neufchatel ...... | 18.7 | 27.4 | 1.8 | 50.0 | 2.4 | 1530 | 4.0 |
| Cheese, cottage .......... | 20.9 | 1.0 | 4.3 | 72.0 | 1.8 | 510 | |
| Condensed milk .......... | 8.8 | 8.3 | 1.9 | 29.9 | 1.9 | 1520 | |
| Condensed milk, unsw. | 9.6 | 9.3 | 11.2 | 68.0 | 1.9 | 780 | |
| Cream ......................... | 2.5 | 18.5 | 4.5 | 74.0 | .5 | 910 | 2.2 |
| Milk, whole ............... | 3.3 | 4.0 | 5.0 | 87.0 | .7 | 325 | 2.2 |
| Milk, skimmed ............ | 3.4 | .3 | 5.1 | 90.5 | .7 | 170 | 2.0 |
| Buttermilk ................... | 3.0 | .5 | 4.8 | 91.0 | .7 | 165 | 2.0 |

These tables on "Chemical Composition of Our Food Supply" are taken from Bulletins of U. S. Department of Agriculture, by permission. They have been rearranged by the author.

Hours of digestion not from Government report.

# LIFE AND DEATH TABLES

The prolongation of life and the prevention of disease is the key problem of the medical world, as well as the scientific world under twentieth century civilization. The life tables are the best witnesses to this fact. The transformations that have taken place in some lines are simply marvelous. This is wonderfully demonstrated in the Japanese army in their war with China, and in their war with Russia. The army hurled against the Russians was more than three times as large as the one martialed against the Chinese. The reduction of disease and death from natural causes in the two armies is marvelous. The following is the disease records of the two armies:

| | |
|---|---|
| Cholera— | |
| Chinese War | 7,667 |
| Russian War | None |
| Dysentery— | |
| Chinese War | 112,052 |
| Russian War | 6,624 |
| Malaria— | |
| Chinese War | 41,734 |
| Russian War | 1,257 |

The following is the death rate in Havana, before and after American intervention, from yellow fever. The table shows the death rate per 100,000 inhabitants.

DEATH RATE FROM YELLOW FEVER PREVIOUS TO INTERVENTION

| | Per 100,000 Population |
|---|---|
| 1870 | 300.5 |
| 1880 | 324.5 |
| 1890 | 153.6 |
| 1895 | 375.8 |
| 1896 | 639.5 |
| 1897 | 428.6 |

AFTER INTERVENTION

| | |
|---|---|
| 1898 | 87.8 |
| 1899 | 42.5 |
| 1900 | 124.0 |
| 1901 | 6.9 |
| 1902 | 0.0 |
| 1903 | 0.0 |
| 1904 | 0.0 |
| 1905 | 8.0 |
| 1906 | 4.3 |

Diabetes and cancer seem to be the two diseases most rapidly on the increase today. One eminent authority has estimated that diabetes has increased 1500 per cent in the last fifty years. Another eminent authority estimates that one man out of every twenty-one men who have reached the age of 35 will die of cancer, and that one woman out of every twelve who have reached the age of 35 will die of cancer. Heart disease and kidney disease are rapidly on the increase, due largely to the over-eating of the American people. Each of these diseases having increased in their mortality more than 100 per cent in the last quarter of a century.

### INCREASING THE LIFE LINE

The life line of the race is gradually increasing. It has been estimated that the average life line at the close of the sixteenth century was only twenty years. At the close of the eighteenth century it had increased to thirty years. At present the average life line is almost forty years. India has the shortest life line of the great nations. There has been practically no increase in this life span in the past twenty years, and India's life line is still less than twenty-four years. The following table will give the life line of males and females for stated periods in various nations:

## TABLE OF NATIONAL LIFE LINES

| | Years | Years |
|---|---|---|
| India Life Line of males, 1881 | 23.7 | |
| India Life Line of males, 1901 | 23.6 | |
| Prussia Life Line of males, 1867-1877 | 35.3 | Females 37.9 |
| Prussia Life Line of males, 1891-1900 | 41.1 | Females 44.6 |
| France Life Line of males, 1817-1831 | 38.3 | Females 40.8 |
| France Life Line of males, 1896-1903 | 45.7 | Females 49.1 |
| England Life Line of males, 1840-1855 | 40.0 | Females 41.8 |
| United States Life Line of males, 1890-1900 | 44.0 | Females 47.8 |
| Sweden Life Line of males, 1815-1840 | 39.5 | Females 43.5 |
| Denmark Life Line of males, 1835-1845 | 44.6 | Females 44.7 |
| Denmark Life Line of males, 1895-1900 | 50.2 | Females 53.2 |

| | Males | Females | Death Rate Per 1000 |
|---|---|---|---|
| India | 23 | 24 | 42.3 |
| Prussia (Germany) | 41 | 46 | 20.0 |
| Italy | 43 | 43 | 21.0 |
| United States | 44 | 48 | 16.5 |
| England and Wales | 44 | 48 | 15.4 |
| France | 46 | 49 | 29.8 |
| Denmark | 50 | 53 | 13.5 |
| Sweden | 51 | 54 | 14.4 |

## ESTIMATED DEATH RATE PER 1000 POPULATION IN CITIES

| | | | |
|---|---|---|---|
| Dublin | 40 | Washington | 19 |
| Moscow | 37 | Boston | 19 |
| Belfast | 31 | Berlin | 17 |
| St. Petersburg | 31 | Chicago | 14 |
| New York | 19 | London | 15 |
| Philadelphia | 19 | Paris | 14 to 31 |

## DISEASE DEATH RATE PER 100,000 IN UNITED STATES, 1907

| | | | |
|---|---|---|---|
| Tuberculosis | 160 | Bright's Disease | 105 |
| Pneumonia | 120 | Apoplexy | 75 |
| Broncho-pneumonia | 40 | Cancer | 73 |
| Bronchitis | 31 | Premature Birth | 36 |
| Influenza | 24 | Congentiality Debility | 34 |
| Pulmonary Diseases, All | 375 | Old Age | 32 |
| Heart Disease | 141 | Typhoid Fever | 30 |
| Diarrhoea | 116 | Diphtheria | 24 |
| Diabetes | 14 | Meningitis | 26 |
| Appendicitis | 11 | Cirrhosis of Liver | 24 |

| | | | |
|---|---|---|---|
| Gastritis | 10 | Endocarditis | 16 |
| Whooping Cough | 11 | Paralysis | 19 |
| Scarlet Fever | 10 | Convulsions | 17 |

### BIRTH RATE PER 1000 POPULATION OF UNITED STATES IN 1900

| | |
|---|---|
| Utah | 35 |
| South Carolina | 34 |
| North Dakota, North Carolina, Oklahoma, New Mexico | 33 |
| Alabama, Arkansas, Georgia, Texas, West Virginia, Mississippi | 32 |
| S. Dakota, Florida, Virginia, Idaho, Kentucky, Louisiana, Tennessee | 30 |
| Minnesota | 29 |
| Nebraska, Wisconsin, Arizona, Pennsylvania | 27 |
| Iowa, Kansas, Missouri, New Jersey, Illinois, Maryland | 26 |
| Delaware | 25 |
| Indiana | 25 |
| Connecticut, Massachusetts, New York, Rhode Island | 24 |
| Michigan, Colorado, Montana, Wyoming, Ohio | 24 |
| Maine, New Hampshire, Vermont, Washington | 21 |
| District of Columbia, Nevada, Oregon | 20 |
| California | 18 |
| Average birth rate for the United States, 1890-1900, probably | 28 |

### NATIONAL BIRTH RATE PER 1000 POPULATION 1890-1900

| | |
|---|---|
| Roumania, Servia, Saxony | 42 |
| Hungary | 41 |
| Austria, Prussia, Bavaria, Germany | 37 |
| Finland, Spain, Italy | 35 |
| Netherlands | 32 |
| England, Scotland, Wales, Denmark | 30 |
| Norway, Belgium, Portugal | 30 |
| Switzerland, Sweden, United States | 28 |
| Ireland | 23 |
| France | 22 |

The annual birth rate of the United States at present is about 3,000,000.

The annual birth rate of the world is at present about 39,000,000.

The annual death rate of infants under one year of age in the United States, 640,000.

The annual death rate under three years of age in the United States, 848,000.

The annual death rate of the world under one year of age is 7,878,000.

The annual death rate of the world under three years of age is 10,350,000.

The total annual death rate of the world is at present 32,000,000. This means 87,671 deaths daily, 3653 hourly, 61 per minute, 1 per second.

The annual death rate of infants under one year, per 1,000 population, 202.

The annual death rate under three years of age, per 1,000 population, is 265.

### DEATH RATE IN OCCUPATIONS PER 1000

| | |
|---|---|
| Mercantile and trading classes | 12.0 |
| Professional | 15.3 |
| Clerical and official | 13.5 |
| Laboring classes and servants | 20.2 |

### STATISTICS ON PREVENTION OF DISEASE

Prussia's smallpox death rate per 1,000,000 was reduced by vaccination in ten years, 1875-1886, from 24.4 to 1.5. Germany had a rigid enforcement of vaccination, and practically eliminated this human scourge. The surrounding nations were lax and were forced to pay heavy penalties in mortality. Switzerland's death roll in 1885-6 was fifty-four fold heavier than Germany's from smallpox. Belgium's was forty-eight fold heavier; Austria's eight-one fold heavier, and Hungary paid the fearful death penalty from smallpox of six hundred and seven fold above the death rate of Germany from smallpox, because of her failure to use vaccination. Havana reduced her death rate from smallpox in 1899, under enforced vaccination, through American intervention, from 3132 to 4. During the seven years following 1899 there were but three deaths from smallpox. It is estimated that 50,000,000 died from smallpox in Europe during the eighteenth century. England's death rate from this scourge ran as high as 300 per 100,000 of the population. Vaccination has not only saved millions of human lives but it has almost eliminated this human scourge from all civilized nations.

### BUBONIC PLAGUE

Bubonic Plague, or the black death, has been almost eliminated in all civilized nations by sanitation. This plague seemed to threaten the extermination of the race in 1348. It is estimated that 13,000,000 died in China alone, and the death roll of the East was more than 24,000,000. London lost 100,000 by death and fifteen cities of Europe lost 300,000. Germany lost 1,244,000 and all Europe more than 25,000,000. The pall of death was upon both land and sea. Ships drifted through the Mediterranean, the North, and the Black seas as simply charnal houses of death—not a single survivor on board. The decomposing bodies on these vessels contaminated and polluted the very atmosphere through which they passed, the breezes wafted the contagion of death from sea to land, and seemed to curse the shores along which they drifted, by the wind and tide, leaving the awful wake of death in their course. Science and sanitation has practically eliminated the bubonic plague from all civilized nations.

### YELLOW FEVER

Yellow Fever has decimated the population of some American cities in less than two months. Philadelphia lost one-tenth of her whole population in six and one-half weeks in 1793. New Orleans has at times paid a fearful death penalty from the assaults of yellow fever. Havana had a perpetual siege of this plague until American intervention took place in 1898. She had 4,420 deaths in the eight years preceding 1898 from yellow fever. In the eight years succeeding 1898 she had 465 cases. Her death rate was reduced from 103 per 1,000 in 1833 to an average of 22 from 1900 to 1908. Her death rate in 1898, the last year of Weyler's "Concentration" reached 91 per 1,000 population.

### PANAMA

Panama held a death rate of 100 per 1,000 in 1887 under the French canal company occupation. The United States Government sent an army of 8,000 men into the Canal Zone at the beginning of her occupancy—not to dig trenches, but to kill mosquitoes. They were armed with germicides for the destruction of these death-dealing pests. They destroyed their breeding grounds and their eggs by these poisons and rendered the Canal Zone practically healthful, reducing the death rate to 34 per 1,000 population. They eliminated yellow fever and made health a possibility for the workmen of the Canal Zone. Typhoid fever and malaria have both practically been robbed of their terror by sanitation and the destruction of the mosquito, and the filtering plant.

# COLDS — THEIR CAUSE AND CURE

Colds are phantom scourges. This is more true of their origin than the cold itself. The cold itself is a genuine article, and a far greater menace to human life than is generally supposed. One of the great dangers of the cold is the fact that we regard it as ''just a cold'' and give it only a passing notice. The cold is the danger signal for all pulmonary diseases, and marks one-fourth of all the human family for the grave, and all before their time. There are more dangerous fallacies concerning the cold than all other diseases. The first great fallacy is as to how we ''catch cold.'' The alleged causes of colds are draughts, wet feet, cold temperatures, exposure and the storm king. Each one of these alleged causes can easily be defended against the allegation. Men, women and children sleep in the Northland in houses builded of ice and snow and to them the cold is an absolute stranger. The Japanese are among the strongest physical characters of the world, yet many of them take their cold bath and dive into the snowdrift, yet are absolute strangers to the cold. Many sleep out under the vaulted sky with the ''Storm King'' thundering around them, in the bleak December winter nights, yet do not ''catch cold.'' Many consumptives with a burning hectic flush one hour, and a drenching sweat the next, are placed out doors all day in our stern New England winters and sleep in a ten-knot gale all night with only the head protected from the storm, and recover under this stern exposure.

### ARCTIC REGION

Arctic explorers spend months and sometimes years in the frigid north in their ice huts, yet they declare that the cold was to them an absolute stranger in the Northland. Miners, lumbermen, trappers, and traders of Alaska declare that in that frigid land of ice and snow the cold is a stranger. You don't catch cold when you plunge into the ocean wave, whether in midsummer or midwinter. Many athletes cut the ice from rivers, lakes, and bays, and leap into the icy waters with no after results of colds. Miners, campers, hunters, and fishermen roll up in a single blanket, and sleep out in the chill, crisp, frosty mountain air and do not "catch cold."

When the shivers chase up and down your spine like a steeple jack, when your lips and finger-nails turn blue as indigo, when your teeth chatter like a buzz saw, when your nose runs like a tapped sugar maple, and when the cold chills chase one another over your anatomy like a hound chasing a hare, then you suddenly discover that you are in church, or you make that appalling, direful, awful discovery that you are sitting in a draught. You are not "catching cold" then, you have had a cold for at least twelve hours and the cold makes you sensitive to the draught. The microbes have been multiplying, gathering in convention, and they are now doing business, assaulting every vulnerable point of your whole body, and in a short time every organ, muscle, nerve, tissue and cell of your whole body will be under assault by these deadly disease germs.

### CAUSE OF COLDS

The real cause of your cold was probably gluttony or filthiness. I mean this in the better sense of the term; the gluttony was an abnormal food supply, greater than the eliminating organs of the body, the stomach, the intestines, the liver, the kidneys, the skin, and the lungs could handle; the filthiness was the clogging up of these eliminating organs, through lack of hygienic breathing, scientific bathing, and healthful exercise. The surplus food was forced into the intestines and down into the colon, or the waste basket of the body, and there was bacterially digested, or in other words was forced to decompose and rot, sending the poisonous fumes and gases throughout the whole system. Nature, to preserve the body in this crisis, produced a fever to burn up this poison, and the result was a cold. Another cause of colds is lack of oxygen, not too much air from a draught of pure fresh oxygen, but too little from improper breathing. In other words, oxygen starvation was the cause of the cold.

The lack of proper bathing, the air bath, the sun bath, the friction bath, the sweat bath, the hot and cold water bath, this allows the pores of the skin to become clogged, and 3,000,000 sewers, or pores of the skin, are stopped up, and back of them is a sewer system thirty miles in length for draining the poisons from the inner portion of the skin to the outer surface of the body. This stoppage of the elimination of poisons through the skin often causes a cold. Anger, malice, hatred, jealousy and worry will also cause a cold. As the porcupine throws his quills, the skunk his unsavory perfume, the snake his venom, when aroused by fear or anger, so the human body generates poisons under the above named conditions, which will cause nervous shock, indigestion, constipation, and the deadly cold.

## VITIATED AIR

Foul air from our schools, churches, theaters, trains, and the polluted and vitiated air from our stuffy bedrooms will also cause colds. Colds are more prevalent in winter than summer because we confine ourselves more to rooms filled with foul, polluted and vitiated air. We bathe less frequently. We eat more heavy and greasy foods. We smother our bodies with flannels and heavy clothing. We deny ourselves the fresh air and sunshine that we take in summer. We close our doors and windows and shut out the fresh air and sunshine. Our schools, our churches and our public buildings are sealed in winter against fresh air, to save fuel bills, and become germ incubators and disseminators of all forms of contagious diseases, especially colds and catarrh and all forms of pulmonary diseases.

The mouth, nose and throat are infested with millions of these disease germs. When the body is normal and kept in a healthful condition, through proper diet, exercise, breathing and bathing, the epithelium, or inner skin lining of the nose, the mouth, the throat, the lungs, the stomach, the intestines, and all the vital organs, are armor clad against every disease germ, especially against all pulmonary disease germs. Lower the tone of the body, by an abnormal food supply, by foul and vitiated air, by clogging the eliminating organs, by poisoning the system, through anger, malice, jealousy and worry, and this armor plate immediately has a letting down, and becomes vulnerable in a thousand places, and the disease germs, especially the pulmonary disease germs, leap through these breaches and begin their deadly assaults on the vitals of the human form. The white blood corpuscles, the defenders of the body, that patrol the thousand miles of the blood stream to defend the body against the invading foe, are themselves disabled by these poisonous conditions of the abnormal body, and do not destroy the disease germs as when the body is maintained in normal condition.

### DANGERS OF COLDS

The dangers from colds and their accompanying pulmonary diseases is so great that the most stringent precaution should be taken, first to prevent them, and secondly to cure them, and prevent their contagion. Do not treat a cold with contempt. Take it seriously. Take a good cathartic, abstain from all food for a day or two. Breathe fresh, pure air lavishly. Quarantine yourself from others. Health authorities will soon quarantine against colds, just as they now quarantine against diphtheria, scarlet fever, measles, and small pox. Avoid crowded assemblies.

Colds present one of the great dangers of the human body. They are the origin and nucleus of all pulmonary diseases. Catarrh, la grippe, pneumonia and tuberculosis all have their origin in a cold. The scientists and physicians all tell us that these diseases are preventable diseases. The cold, which is the origin of them all, is also a preventable disease. A cold is an infantile fever. It is Nature's method of burning up the waste, the dross and the poisons of the system. The body has accumulated more of these poisons than the eliminating organs—the lungs, the skin, the intestines, the liver, and the kidneys—can eliminate. Nature would destroy these poisonous and waste materials by burning them up in the body. By raising the temperature of the body she is able to consume this poisonous and waste matter. This is her method of cleansing. Fire is Nature's greatest purifier.

### COLDS ABNORMAL

All colds are abnormal. They are the result of the abuse of the body, either from ignorance or criminal negligence. There are many fallacies concerning the causes of a cold. Most people believe they "catch cold" from a draught, from a chill, from dampness, or from wet feet. None of these will cause cold if the body is in normal condition. The body must be tempered to the cold air and low temperatures just as the steel is tempered or hardened by the fire. The body is tempered to the low temperature of the climate by the air bath, the sun bath, and the daily cold water bath. The eliminating organs must be kept in normal condition by the friction bath, the sweat bath, the hot water bath, by scientific exercise, and by a normal food supply, selected according to dietetic principles. All of these aid in preserving the body in normal condition and act as preventatives of colds. Draughts and abundance of fresh air are tonics to the normal body.

### CHIEF CAUSE OF COLDS

There are many causes for colds, but one of the chief causes is over-eating. This cause is generally not reckoned with in counting the cause of colds, although it is probably the most prevalent cause. We fill the stomach, intestines and colon, which is the waste basket of the body, with an abnormal amount of food. This can not be digested or assimilated, so it is crowded down into the colon, or waste basket, and is bacterially digested, or in other words it decomposes and rots in the intestines and colon. The poisonous fumes of this decomposed food is carried all over the body by the circulation of the blood. This decayed food in the intestines brews an alcohol more deadly than any still in the land. It is brewed in the illicit private distillery of the stomach and the intestines. It is carried to the brain in the fumes and poisonous gases, and throughout the whole system, producing auto-intoxication. Think of a Christian being drunk on alcohol brewed in the private distillery of his own stomach and intestines.

### FOOD POISON

The poisons from this decaying food are carried to the liver and kidneys, but with all their miracles of elimination of poisons from the body, they are unable to eliminate this, because they are already over-worked, and further elimination is impossible. The poison is carried to the lungs and the skin, but they too are over-worked by the abnormal food supply and can not eliminate this poison. It circulates through the body, poisoning the cell life of tissue, nerve, muscle, bone and brain. Elimination is impossible through any of the ordinary channels for this poison arising from decaying foods. Nature provides a miniature fever to burn and consume these poisons, and thus preserve the life of the body. This miniature fever consuming the poisons of the body is a cold. The cold is man's benefactor. It was rendered necessary by the abuse of the body through the sin of gluttony.

A cold may be caused by anger, hatred, fear or jealousy, especially at meal time. These attitudes of mind stop the processes of digestion and assimilation and clog the whole system. They stop the flow of the saliva in the mouth, the gastric juices of the stomach, and the pancreatic juices of the pancreas. If you wish to test the power of the mind over the stomach, imagine you have swallowed a fly, and you will heave-to like a sea-sick mariner.

### WORRY

Worry will cause a cold. This is one of the most destructive agencies of the human body. It not only produces a cold, which is an infantile fever, but it will produce a genuine fever. Worry aggravates a cold and will ofttimes develop serious pulmonary diseases. Worry prostrates the nervous system. It destroys digestion and assimilation of food. It retards the circulation of the blood and impoverishes the cell life. It blasts the health and blights the brain power. It invites premature old age, and untimely death. The normal body knows no cold. Worry makes an abnormal body and renders it susceptible to colds.

That deadly scavenger, the common house fly, will cause a cold. He comes to your home, your table, your food, your milk, from the decaying carcass, the excreta and sputum of the consumptive, and from the cold-infected invalid, with literally thousands of pulmonary disease germs on his legs and body. He infects your food supply with these disease germs, causing colds and other pulmonary diseases and perchance slides down your throat, making your stomach an incubator for his disease germs. "Swat the fly." Bar him from your homes—annihilate him.

### HOW TO PREVENT COLDS

Prevention of disease is the coming watchword of the medical and scientific world. Already our physicians are sounding this as the dominant note in the higher medical atmosphere. Some of the world's greatest physicians are giving their lives to this great department of medical science. The watchword of the New Health Conscience already is prevention. Pervention of disease was the dominant note of our government in the building of the Panama Canal in that malignant climate. It has been the dominant note of the United States Army, at New Orleans, Havana, and in the Philippine Islands. It has revolutionized the condition of health in these malignant climates and placed them on a health footing with the more favored climatic positions and locations. It will be the dominant note in the "Department of Health" in the United States Government, when this shall be established, as it must inevitably be in the near future, when a few petty jealousies have been swept aside. Already our Government has rendered signal service in the prevention of disease through special departments. The malignant contagious diseases that once swept like a plague over whole sections of our community have become practically a thing of the past, through the principles of prevention. Smallpox, diphtheria, typhoid fever and yellow fever have practically been robbed of their terror, as prevailing scourges, through the practical application of the principles of prevention.

Prevention of colds, and through this the prevention of all pulmonary diseases, is to have a large emphasis in medical circles in the next quarter of a century. Colds are the initial cause of the death sentence being passed on more than 400,000 people annually, in the United States, through pulmonary diseases, practically all preventable. Colds should be classed as contagious diseases. In the near future children with colds will be barred from our public schools until they have recovered. This for the good of the child and for the prevention in spreading the disease to hundreds of other pupils. The greatest peril of the colds is that we do not take them seriously. The awful roll of death, 400,000 annually from pulmonary diseases, is due entirely to the criminal neglect of the individual in caring for the cold.

## OVER-EATING

The great danger signal of colds, the red flag of distress, that should be hoisted over each individual is over-eating. The sin of gluttony is the death sentence of hundreds of thousands, yes millions in our nation. Over-eating is the primary cause of a large percentage of the pulmonary diseases. Pulmonary diseases have their inception in the cold. The cold has its origin in over-eating. One of the first essentials in the prevention of colds is the reduction of the food supply. "Man digs his grave with his teeth" is especially true in all pulmonary diseases, and doubly true in the case of colds. As stated in the "Cause of Colds" the abnormal food supply clogs all the organs of elimination of the whole body, the stomach, the intestines, the kidneys, the liver, the lungs and the skin. These organs cannot eliminate the poisons generated by the decaying food in the intestines, so Nature must burn up these poisons in the body to prevent death. She burns them by raising the temperature of the body to the fever point. This fever we call cold. It was produced by over-eating. We must avoid it in the future by adopting a normal supply of food and a balanced ration.

We also prevent colds by tempering the body to the cold air and draughts, by the air bath, the sun bath and the cold water bath.

We prevent colds by perfect elimination of the poisons of the system through the skin. The 3,000,000 pores of the skin must be kept open. The 30 miles of sewage made up by the sweat glands leading to these pores must be kept open. We breathe in one-thirtieth as much oxygen through the skin as through the lungs. We also eliminate about the same proportion of poisonous carbonic acid gas through the skin, The skin must be kept in perfect condition for the elimination of this and other poisons if we would avoid colds. We keep the skin in proper condition for the elimination of these poisons by the friction bath, daily, the sweat bath and the hot water bath at least three times per week. This is one of the great preventions for colds and pulmonary diseases.

### EXERCISE

Hygienic exercise is a great preventive of colds. Special exercises for the stomach, the liver, the kidneys and the intestines, stimulate these organs and furnish them with a sufficient amount of blood and oxygen to feed the cell life and enable them to perform their functions of elimination, so that the poisonous and waste matter may be removed from the body and it may be kept in normal condition. Colds are impossible when the body is in normal condition.

Colds are prevented by avoiding anger, hatred, malice, jealousy and fear. These derange the whole system and often produce colds.

Colds are prevented by hygienic and scientific breathing. Oxygen starvation is common cause of colds. Scientific breathing will furnish sufficient oxygen to purify the blood and feed the cell life. It will furnish a chest expansion of at least 5½ inches, which is an absolute necessity to furnish 300 to 350 cubic inches of air for the lungs: this will fill the 725,000,000 air sacks of the lungs, furnish sufficient oxygen to purify the blood and feed the cell life and prevent colds by proper elimination of the poisonous carbonic acid gas.

## CATARRH

Catarrh is one of our most prevalent diseases, as well as one of the most dangerous. It is often confused with a cold. It consists in an abnormal flow of mucus from the mucus membrane. This is generally preceded by congestion and dryness. The cause of catarrh is often the same as the cause of a cold. It is often caused by a sudden checking of perspiration, especially when the body has not been given normal care. It is often caused from being overheated. Breathing foul air often causes catarrh. The dangers of catarrh lie in the fact that it may assault so many vital points in the mucus membrane of the body. Catarrh is named according to the location of assault. Nasal catarrh is one of the most common. It is called rhinitis. The exercises for catarrh will be found especially helpful for this trouble, both as prevention and cure.

When catarrh affects the throat it is called pharyngitis. When it attacks the vocal cords it is called laryngitis. It sometimes attacks the membrane covering the eyeball and lining the eyelids, it is then called conjunctivitis. When the mucus membrane of the stomach is attacked by catarrh it is called gastritis. If the mucus membrane of the intestines is assaulted it is called enteritis. When the blader is attacked by catarrh it is called cystitis. It is called bronchitis when the mucus membrane of the bronchi is affected. Prevention of catarrh is practically the same as the prevention of colds.

La Grippe, or influenza, seems to be a form of catarrh spreading over the whole body. La Grippe has been both epidemic and pandemic for the past 800 years. It has often swept the whole world and has caused the death of millions. The last great world scourge of La Grippe was in 1889. It numbered its victims by the millions and the dead by hundreds of thousands. There was a recurrence of this scourge in 1893-4.

### CAUSES OF CATARRH

There are many causes producing catarrh. Overheating the body, checking perspiration suddenly when the body is not in normal condition, breathing foul and vitiated air, or inhaling dust from musty store rooms, cellars and garrets. The disease germs attack the mucus membrane of the nasal passages, the head and the throat. This causes inflamation resulting first in congestion and that stinging dryness of the nasal catarrh. After this stage there follows that flow of mucus from the head and nasal cavities. Catarrh is often caused by an abnormal supply of food and by constipation. The treatment of catarrh demands a light diet. It demands abstinence from all fats and dairy products, except buttermilk. It also demands the normal care of the body along the lines of breathing, bathing and exercise. The best relief for the stinging dryness of the nasal cavities and the dry scabs is to make a small cloth swab by wrapping a piece of cloth around a match stem or something similar, and swab the nasal cavities with vaseline. A nasal douche of salt water is also a relief. The following exercises will be found especially beneficial, in both prevention and cure of catarrh. The above suggestions on diet should be rigidly observed.

### COLDS AND CATARRH OF THE THROAT

The throat is very sensitive to the attacks of colds or catarrh. The disease germs find a paradise in the mucus membrane of the throat. The mouth breather is especially in peril from the disease germs. They are carried in the minute particles of dust into the throat and adhere to the mucus from the mucus membrane of the throat. Here they form a culture and begin their rapid propagation. Some conception of the marvelous reproduction of these disease germs may be gained from the increase of bacteria in milk. L. A. Rogers, of the United States Department of Agriculture, tells us that a single bacteria will multiply to 24 in 12 hours. It will increase to 6128 in 24 hours. In 48 hours it will multiply to the enormous number of 357,499. If the milk was held at a temperature of 68 degrees a single bacteria would produce 357,499 similar bacteria in a period of two days. The same author tells us that with careless handling of milk a cubic centimeter of milk, or 25 drops, may contain 100,000 bacteria. This would mean 4000 bacteria to a single drop of milk. He also declares that a single drop of sour milk may contain 40,000,000 bacteria.

### ASSAULT OF DISEASE GERMS

The marvelous reproduction of germ life reveals the dangers from the deadly disease germs. The throat affords one of the best cultures for the reproduction of these disease germs. In a brief space of time after infection, literally millions of these disease germs are feeding on the delicate membranes of the throat. The only reason that man escapes death from the vicious attacks of these millions of disease germs is the marvelous provisions that God has made in the human body for their destruction. When the body is preserved in normal condition by scientific breathing, bathing, diet and exercise, those wandering warriors of the blood, the white blood corpuscles, patroling the thousand miles of the blood stream, will battle to the death every disease germ that assaults the human body. Colds, catarrh, la grippe, pneumonia and tuberculosis are all preventable diseases. They are the result of the neglect and criminal abuse of the body. Colds and catarrh are the preliminary steps to the great white plague of pneumonia and tuberculosis.

If through ignorance, neglect or abuse of the body we are so unfortunate as to suffer assault by the disease germs of cold or catarrh, and the disease germs assail that most vulnerable point of the human body, the throat, it is imperative that we take immediate steps for their destruction. The following exercises will be found most helpful for their destruction, and for the relief of colds and catarrh of the throat. The exercises should begin the moment the first note of warning is sounded by the throat, before the disease germs become strongly entrenched and fortified by millions in number.

### GENERAL CARE OF THE THROAT

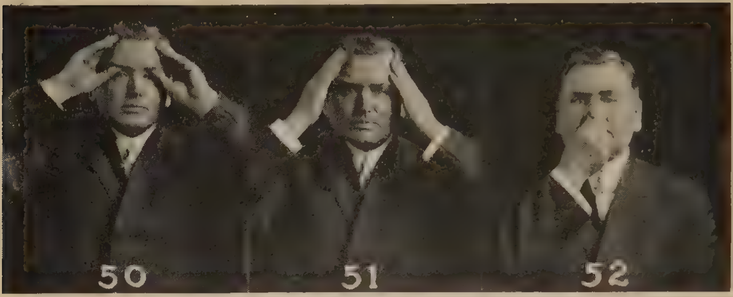
The throat is not a hot house plant. All throat mufflers and chest protectors should be burned. The neck and throat should be exposed to the cold and the fresh air. The best chest and throat protector is the morning cold bath. The chest protector is a filth gatherer. The throat muffler over heats the throat and starts the perspiration, opening the pores of the skin. Then a cold draught of air strikes the open pores and congestion and cold is the result. The throat must be bared to the winter's blast. There is no truth in that beautiful declaration which many persons have attributed to the Bible, but which they are never able to find therein ("He tempereth the wind to the shorn lamb"). He does temper the shorn lamb to the wind, but never the wind to the shorn lamb. So the throat by exposure and by the cold bath must be tempered to the cold, not shielded from it as a hot house plant.

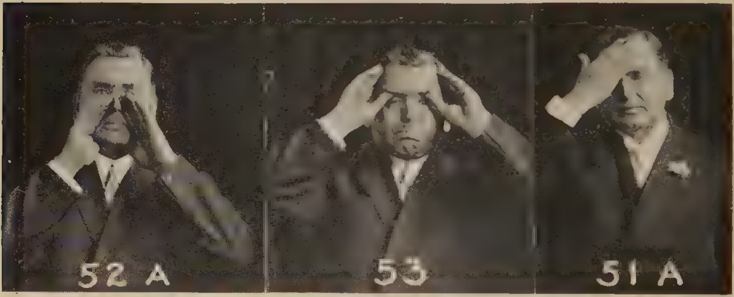
The writer was formerly addicted to severe colds and aggravated sore throat. He was often unable to speak in public for two or three weeks. These colds came in quick succession one after the other. He wore a heavy silk muffler and fled from a draught of fresh air, as the hare from the hound. Five years ago I discarded the silk muffler, bared my throat to the breeze, and the winter blast of New York, Pennsylvania and Ohio, although I had been in the sunny clime of California for a quarter of a century, I found no ill effects from this treatment. I substituted the morning cold bath for the muffler. During the past five years I have had but two colds, one was broken up in two days, the other in about three days. The individual who breathes the fresh air lavishly, who follows hygienic bathing, who uses only a normal amount of food, will have little trouble with colds, catarrh or pulmonary diseases.

## EXERCISES FOR RELIEVING CATARRH OR COLD IN THE HEAD AND THROAT

### Cut No. 50

Exercise No. 50. Posture: Correct standing position. Place the balls of the thumbs in the bone arch over the eye, press in and upward gently, vibrating the thumbs back and forth along the bone arch over the eyes. Do this five times, each time a little more than the time of a full breath. With thumbs in the same position, bend the head below the waist line, flush the face and continue the vibration one full inhalation, repeat this flushing and vibration five times. Care should be taken not to flush too strenuously, or too long. The flushing forces the blood into all the minute capillaries, stimulates the circulation, and relieves congestion. It also provides an abnormal blood supply for the head, so that there is furnished millions of those wandering warriors, the white blood corpuscles, these marine warriors of the





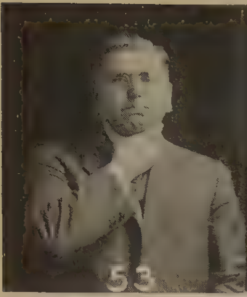
CATARRHAL EXERCISES 50-52A. FLUSHING—53

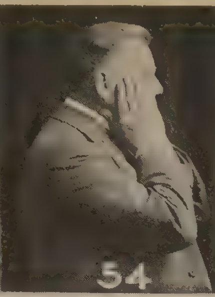
"White Navy" assault the disease germs, slaying them by the millions. The vibration of the thumbs massages and stimulates the nerves that come out over these arches and spread over the forehead. This single act of flushing as above described will ofttimes break up a cold in its inception. Pure blood means the destruction of disease germs.

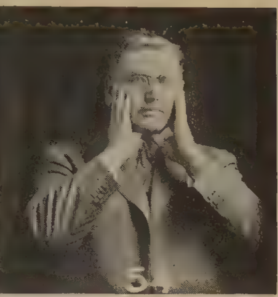
**Cut No. 51**

Exercise No. 51. Posture: Correct standing position. Place the hands over the forehead as in above cut, massage the forehead lightly by striking it lightly, alternately with each hand, rub the hands up and down over the forehead rapidly with moderate pressure, finish by rubbing the right hand across the forehead rapidly from right to left. Be sure the hands and forehead are dry for this exercise, or you may chafe the forehead. Hands may be dried by rubbing them rapidly together. Flush fully and hold the head below the waist line while taking these exercises. This stimulates the capillaries of the forehead, invigorates the nerves, relieves congestion, and stimulates the flow of mucus from the mucus membrane spread over the forehead.

Exercise No. 52, Page 320







EXERCISES FOR SORE THROAT, COLDS AND CATARRH OF THE THROAT

**Cut No. 53**

Exercise No. 53. Posture: Correct standing position. Place the hand at the throat as in above cut. Set the muscles of the diaphragm forcing the air into the mouth and throat, draw the chin downward and backward, repeating the exercise five times. Repeat the exercises every half hour until you find relief. This forces the blood into the throat and nasal passages, and furnishes an army of the white blood corpuscles which immediately assault the disease germs and destroy them.

## MASSAGING THE THROAT FOR SORENESS

**Cut No. 54**

Exercise No. 54. Posture: Correct standing position. Place the hands flat on the sides of the face, thumbs directly under the jaw bone. Massage thoroughly with the balls of the thumbs all along the under line of the jaw bone, beginning at the lower point of the ear, work the thumbs thoroughly along the windpipe and around the tonsils, and every part of the throat, letting the thumbs reach as far in as they will in the massage. As you massage the throat, continue the flushing. Lemon juice without sugar is beneficial for the throat.

### Cut No. 55

Throat exercise No. 55. Posture same as above. Mouth wide open, thrust the tongue out of the mouth as far as possible, throwing the chin down toward the neck. Repeat this exercise five times slowly, then five times rapidly. Use this exercise three times per day in mild cases, and every three hours in severe attacks.

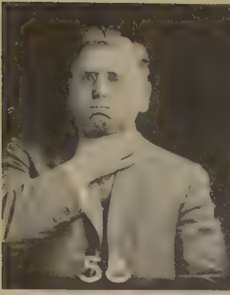
### Cut No. 56

Throat exercise No. 56. Posture same as above. Thrust the neck and the chin forward and upward with a quick jerk, flush to full capacity, drawing the neck and the chin backward and downward with a quick jerk. Repeat this exercise five times to begin with, increasing the number as the case may require. These exercises should be taken three times per day in mild cases and every three hours in severe attacks. In treating cold and catarrh in the throat all breathing must be through the nostrils. This is the only hygienic breathing. Never breathe through the mouth. The nostrils warm the air, the small hairs and the mucus of the nostrils arrest the small particles of dust and the disease germs. There is also emitted from the nostrils a kind of anaesthetic, which tends to destroy the disease germs, or at least chloroforms them so they fall an easy prey to the marine warriors defending the body, the white blood corpuscles. Deep breathing furnishes pure blood. No disease germ can live in pure rich blood. Pure blood masters all pulmonary diseases.

### Cut No. 57

### RELIEF FOR SORE THROAT AND DEVELOPING THE NECK

Throat exercise No. 57. Posture: Correct standing position. Chest forward. Throw the head backward, the chin outward, place the thumb and forefinger directly under the point of the chin, hold the chin firm with the hand and fingers, flush and force the head downward, assume original position, lower the thumb and finger half an inch and repeat the exercise; continue the exercise, lowering the thumb and finger half an inch each time. When the tonsils are reached, widen the thumb and finger and repeat the exercise five times over the tonsils. Continue the exercise until the thumb and finger reach the chest bone. This exercise stimulates the nerves and muscles of the throat, develops their strength, stimulates the circulation of blood in the capillaries. This will relieve soreness in the throat or tonsils. Continual practice will develop a beautiful symmetrical neck.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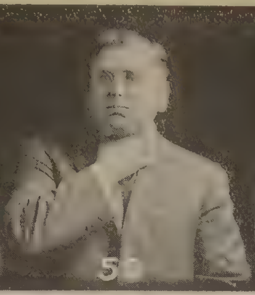
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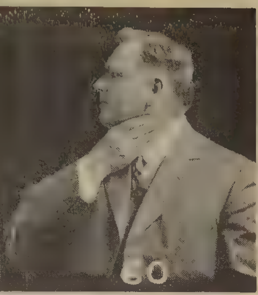
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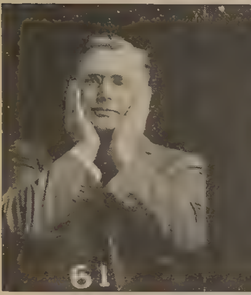
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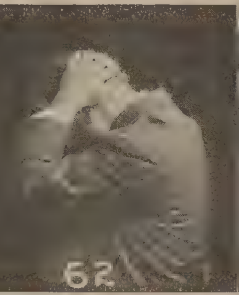
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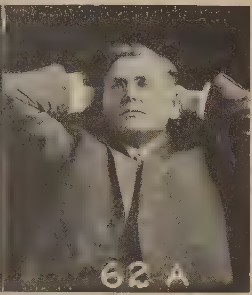
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**Cut No. 58**

Throat exercise No. 58. Posture same as above. Throw the head well back, span the throat with the full length of the thumb and forefinger as close to the chin as possible, flush the cheeks and thrust the head downward vigorously, pressing the throat hard against the thumb and finger, raise the head backward, lower the thumb and finger half an inch on the throat, flush again, and repeat the exercise. Continue the exercise, lowering the thumb and finger half an inch each time until you reach the chest bone. This exercise will be found a relief in sore throat. It will also develop the nerves and muscles of the neck, producing a beautiful, well developed throat and neck.

**Cut No. 59**

Throat exercise No. 59. Potsure: Correct standing position. Throw the head backward as far as possible, place the hand and thumb under the chin as shown in the cut, press firmly with the whole hand against the throat, massaging with the thumb and fingers as you flush lightly. Lower the hand half an inch and repeat the exercise, dropping the hand half an inch each time and massaging with the thumb and fingers, work the hand down to the chest bone. Working the hand from the chin to the chest bone should require only a few seconds. Throw the head downward as far as possible, drawing the point of the chin backward. Repeat the whole exercise five times to begin with. This develops the throat and neck, stimulates the circulation, eliminates the wrinkles and loose flesh about the chin, and develops a beautiful neck.

### Cut No. 60

Exercise No. 60. Throat and Neck. Posture: Correct standing position. Turn the head far to the right as possible, chest up and shoulders back, place the thumb on the right side of the windpipe and the fingers on the left, with the balls of the fingers commencing at the windpipe, massage the left side of the throat, reaching backward to the cords on the sides of the neck. Turn the head as far to the left as possible, massaging the muscles on the right side of the throat in the same manner. Massage each side three times in this manner, then turn the head far to the right and far to the left three times, holding it a moment in each position. These exercises will develop a beautiful throat, remove the wrinkles and loose flesh about the chin and the sides of the neck, and will be of great benefit for colds and catarrh of the throat.

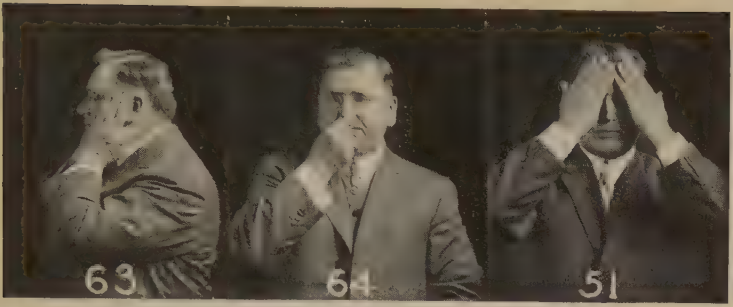
### Cut No. 61

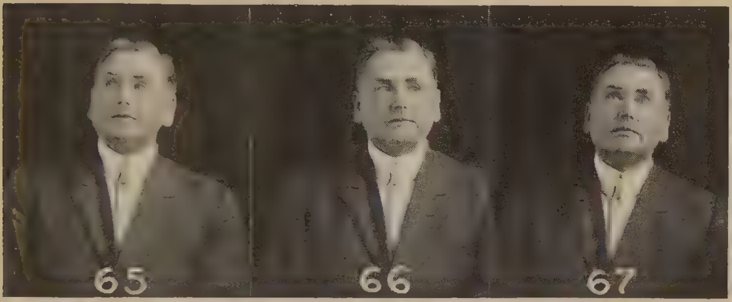
### MASSAGING THROAT AND FACE AND REMOVING WRINKLES

Throat and face exercise No. 61. Posture: Correct standing position. Chest forward, head erect, place the heels of the hands under the chin on the throat and the upper portion of the hands covering the face as in the cut. Press the hands lightly but firmly upward and backward, with the heaviest pressure on the throat. Repeat the exercise ten times. The pressure must not be too heavy if you wish to develop a fuller neck, as the heavy pressure will have a tendency to reduce rather than develop. Use the heavy pressure if you wish to reduce the amount of flesh around the neck. This exercise will remove wrinkles from the throat and face, develop the nerves and muscles of the throat and stimulate the circulation of the blood in the capillaries.

### Cut No. 62

Throat and neck exercise No. 62. Posture: Correct standing position. Chest upward and forward, hands clasped over the back of the head, keeping the chest and shoulders up, draw the head downward as low as possible, then throw the head backward as far as possible, resisting slightly with the hands as the head is thrown backward. Repeat this exercise five times to begin with, increasing to ten with





Cuts 65-67, Eye Exercises, See Pages 327-8. Cut 51, See Page 314.

practice. Drop the hands down to the back of the neck and thoroughly massage the cords and muscles of the back of the neck with the balls of the fingers. This exercise develops the cords and muscles of the neck, stimulates the flow of blood to the brain and through the capillaries of the neck and throat. Good circulation of pure blood means healthful organs.

### Cut No. 63

Throat and ear exercise No. 63. Posture: Correct standing position. Place the hands over the throat and face, the ear between the first and second finger, flush the face to full capacity, pressing upward and against the face lightly, squeezing the ear between the first and second fingers, repeating the exercise three times. Rub the hand up and down with the ear between the first and second fingers, with the balls of the fingers tap lightly the temporal bone just back of the ears, striking lightly about five times and repeating the exercise three times. This will stimulate the nerves and muscles of the throat and ear, and will often relieve partial deafness. Almost all deafness, except direct injury to the ear drum, is caused by colds and catarrh of the throat, passing to the ear through the eustachian tube. The communication between the nose, the throat and the ear are so vital that the one seldom is impaired without affecting the other. Inhaling pungent odors often seriously impairs the hearing. Cold water is detrimental to the ear; use warm water when washing the ear. This will soften the wax, and if anything further is needed, use a drop of almond oil.

### Cut No. 64

Throat and nose exercise No. 64. Posture: Correct standing position, chest forward and up. Close the nostrils with the thumb and forefinger, flush the face by setting the diaphragm and forcing the air into the throat, the mouth, and the nostrils, repeat the exercise three times. Care should be exercised not to create too heavy a pressure on the eustachian tubes of the ear. Should there be a fullness or ringing in the ear, place the finger on the tragus, closing the opening of the ear and force the air out. This exercise flushes the throat and the nostrils, and also opens up the eustachian tubes of the ears by forcing the air into them. The exercise is most beneficial for the nostrils and the breathing. The majority of people have used the nostrils so little for heavy breathing that they have become narrow and pinched in rather than being fully developed, so that there can be a generous supply of air admitted to the lungs, through the nostrils. Many animals snort through the nostrils, thus enlarging them. Man instead, breathes through the mouth and allows the nostrils to become pinched and narrow. All persons who have pinched and narrow nostrils should practice this exercise daily to enlarge the lower portion of the nostrils so that they may breathe in sufficient air to purify the lungs and the blood.

### Cut No. 52

See Page 314

Exercise No. 52. Posture: Correct standing position. Close the lower nostrils by the thumb and forefinger as shown in the cut, lower the head below the waist line, flush lightly five times, forcing the air into the upper chambers of the nostrils, the throat, and the air passages leading to the ears; then with the thumbs under the chin, and the forefingers of each hand on the sides of the nose, rub the outer sides of the nostrils back and forth against the inner sides, breathing heavily through the nostrils. Repeat this five times, massaging the under portion of the throat with the thumbs and the nostrils with the fingers. This will stimulate the circulation, relieve congestion, and start the flow of mucus in the upper portion of the throat, the upper chambers of the nostrils, and with the other exercises will relieve congestion in the entire upper throat and nostrils and the entire forehead. It will stimulate the flow of mucus throughout the entire upper throat, nostrils and forehead. It will afford immediate relief for catarrhal congestion and will eventually cure many of the most aggravated cases. Take these exercises before retiring, then swab the nostrils gently with vaseline and you will find wonderful relief. Use a light diet when treating for catarrh. Avoid all dairy products, salt, vinegar, and all highly seasoned foods. See "Catarrhal Foods."

# THE HUMAN EYE

The human body is made up of miracles. We find them in the cell life. We find them in the blood. We find them in the nerves. We find them in the vital organs, the lungs, the heart, the stomach, the intestines, the liver and the kidneys. We find miracles in the human brain. We are not surprised when we are forced to acknowledge a miracle in the human eye.

The eye is one of the most wonderful organs of the body. For protection it is barricaded behind bone fortresses. It is curtained and shielded by a wink. It is watered by a tear. Its pigments for coloring the objects stretched upon the retina are manufactured by the liver out of the waste and worn out red blood corpuscles. The eye is under perpetual assault from the sun, the wind, the dust and desert waste. It endures hardness as a good soldier. Amid all its difficulties it lights the pathway of man's destiny from the cradle to the grave, and ofttimes for a period of more than a hundred years.

## ABUSE OF EYES

The eye is the victim of untold abuse. It not only suffers because of the ignorance, neglect and criminal abuse of the individual owner, but it must bear the iniquities of the fathers visited upon it sometimes even from the fourth generation. The hereditary diseases of the eye are among the saddest stories of human history. Thousands of children are found today in our asylums for the blind, because of the passion, the debauchery and the sensual indulgence of the parent. Medical authorities estimate that there are 3,000,000 people in the United States suffering from gonorrhea or kindred diseases, while Dr. Sadler estimates that 80 per cent of all the males in the United States have been afflicted with these secret diseases. He also estimates that of the

800,000 boys who reach maturity annually 500,000—half a million—of these boys plunge themselves into the great sewer of city slum life because of inadequate instruction and education. Then follows the saddest portion of his estimate. Of these 500,000—the flower of our flock—about 400,000 annually of these choice young men become the victims of the "Black Death," gonorrhea or its kindred diseases. He also estimates that from 50 to 60 per cent of the surgical operations performed upon women have been made necessary because these women are the innocent victims of the awful ravages of these secret diseases.

Womanhood and motherhood are not alone in the ravages of these malignant secret diseases. The innocent children must share in the penalty imposed upon their fathers for their sensual sins. Blindness is one of the curses visited upon the children of the libertine for his transgressions of moral law. God hasten the day when no man can secure a marriage license until he has first secured a medical certificate showing that he is free from all secret contagious diseases. Then and not till then will womanhood, and motherhood, and babyhood be protected as the innocent victims of the libertine. Until then the innocent must suffer with the guilty. Thousands of blind children in our asylums are the helpless victims of the father's sensual passion.

## NATURAL ABUSE OF THE EYES

Thousands of children are forced to go through life with impaired eyesight because of ignorance or wilful neglect on the part of the parent. Defective eyesight is often the cause of the seeming dullness of the pupil. Eye strain can destroy the whole nervous system of the child. It enervates the brain and destroys the will power of the child. It shuts the flood gates of knowledge, closing the gateway to the brain. All the dull pupil needs is the enkindling of the smouldering fires of genius. This may be done by lifting the burden from the nervous system by removing the eye strain.

Lift this burden from the child, open the flood gates of knowledge to the brain and the intellect will flash like the cut diamond loosened from its prison walls. It will become as keen as the Damascus blade. Give the child a chance with unimpaired vision. Every pupil of our grammar schools and every student in our high school should be given free the services of an eye specialist at the expense of the state. They should also be provided the necessary eye glassss when the parents are unable to provide the same. This would be one of the best investments our government could make. It would be a perpetual blessing to the child and the future man or woman.

## EYE STRAIN

The burden of the eye under twentieth century civilization is appalling. We place the burden of eye strain upon the child before it is six years of age. Ofttimes for twenty years we hold it under that awful strain. It carries it through the grammar school, the high school, the college, the post graduate work and the professional course. Is it any wonder that this most delicate organ of the human body often gives way under this strenuous work? The field of the eye specialist has been limited. The eye specialists have been few. The masses have not felt the need of the service of the eye specialist because of their limited knowledge of the demands of the eye for scientific treatment.

The eye has not only its own delicate problems, but it suffers sympathetically with the ills of the whole body. It forms an integral part of the nervous system. It naturally partakes of the maladies of the whole nervous system. It also has its own individual problems. The ignorance of the masses as to the use of eye glasses has been a barrier to the care of the eye. Glasses are regarded even today as the complement of old age. Many people almost go into hysterics even now when they see glasses on the child. We have yet to learn that defective vision is a greater calamity to the child than a broken arm. We summon the physician post haste for the one and give scarcely a passing thought to the other. Defective vision closes the gateway to the brain.

## BRILLIANT MINDS AND DEFECTIVE VISION

Some of the most brilliant intellects of the world have been shackled by defective vision. Milton was forced to give to the world her greatest epic poem, "Paradise Lost," through blind eyes. This was inspired by the lost ideals of his own life. Less than fifty dollars was his reward for this brilliant masterpiece. His blindness closed the eyes of the world to his brilliancy. Homer gave the world her Greek masterpieces, the "Iliad" and "The Odyssey," through blind eyes. The world was probably robbed of more than three-fourths of the product of Carlyle's brilliant mind because his defective eyesight limited him to a half page per day in much of his literary career. The great scientist Huxley for forty-five years abandoned his study for the moors and fens, and there nursed the excruciating pains of a throbbing brain caused by eye strain. DeQuincy was the most brilliant classic scholar of all Europe at fourteen. He became a confirmed opium fiend, thus paralyzing his brilliant intellect and robbing the world of its product. His closest friends and ablest critics believe this was forced upon him by the brain agony and torture caused by eye strain. Eye strain is responsible not only for a large percentage of the dull pupils in our public schools, but it is the cause of a large percentage of the nervous wrecks on the shores of time.

Eye strain is responsible for a large percentage of the insanity that is filling our asylums. It deranges the whole nervous system. Our headaches and especially our sick headaches are often the product of defective vision. The natural adjustment of the lense of the eye is for long distance rather than for short vision. The eye is focused for long distance by the elastic pull of the coats of the eyeball. No muscular action is necessary in focusing the eye for long distance. The eye is resting in long distance vision. The long distance vision does not tire the eye. When we focus the eye for short vision, as in study, we do it by thickening the crystaline lense. This must be done by muscular action. Hence our continuous study periods force a continuous muscle strain upon the eye. Is it any wonder that we suffer with eye strain when we prolong this muscular action into weeks, months and years?

## CARE OF EYES

The scientific care of the eye is of greater importance than the development of the brain. The eye is the gateway to the brain. Close this gateway and all knowledge must enter the brain through new paths and through new channels. To the average individual the shutting of the eye gateway to the brain means the closing up of all brain paths. It means the shutting out of knowledge. The dwarfing of brain power and activity. It means the shackling of intellect. It means ofttimes the blasting and blighting of the world's keenest and most brilliant minds.

Treat the eye as the body's richest gem. More priceless than diamonds, more precious than rubies. Place its care in the hands of the best oculist at your command. Under his prescription let the best optician prepare the eye glasses for yourself and your children.

Protect the eye from the bright light. In study let the light fall upon the book not in the eye. Do not read in the bright sunshine, especially with the sunshine on the printed page. Do not read in the twilight. The eye lenses are changing from day to night. Rest the eyes repeatedly.

## MIRACLE OF HUMAN EYE

The miracle of the human eye is perhaps unsurpassed in all the wonders of the body, save that of the human brain. If man's vision is limited in discerning minute particles, he places them under the microscope and magnifies them

100,000 diameters. By this process he counts the millions of cells, or the hundred thousand disease germs in a single drop of blood. The field of vision enlarges from thousands to millions.

When man wishes to scan the star dust or nebulae of the milky way and finds his vision limited, he places his eye at the lense of the telescope, millions of miles are swept aside in the twinkling of an eye, and man's vision is scanning the mysteries of millions of worlds which to the naked eye seem only as a faint cloud in the sky, or the distant waving of a gauze veil in the remote heavens. The eye can be educated as well as the brain. The vision of the eye can become almost as keen as the surgeon's knife. Virtually as keen as a Damascus blade. Surely this wonderful instrument is worthy of our highest protection and our tenderest care. Guard well this gateway to the brain.

### EXERCISE FOR THE EYE

**See Cut, page 319**

The eye needs exercises as much as the stomach, the liver and the kidneys. The general care of the whole system will strengthen and build up the eye. Stimulating the nervous system is especially beneficial to the eye. The healthful condition of the stomach is contributory to a healthful condition of the eye. The elimination of surplus food so that no poisonous gases are generated in the stomach and intestines is helpful to the general condition of the eye. The care of constipation and indigestion are great aids in the preservation of the normal condition of the eye. A healthful condition of all eliminating organs is a health stimulant for the eyes. Hygienic care of the body means stronger eyes.

### EXERCISES FOR STRENGTHENING THE EYE

**Cuts No. 65, 66, 67, Page 319**

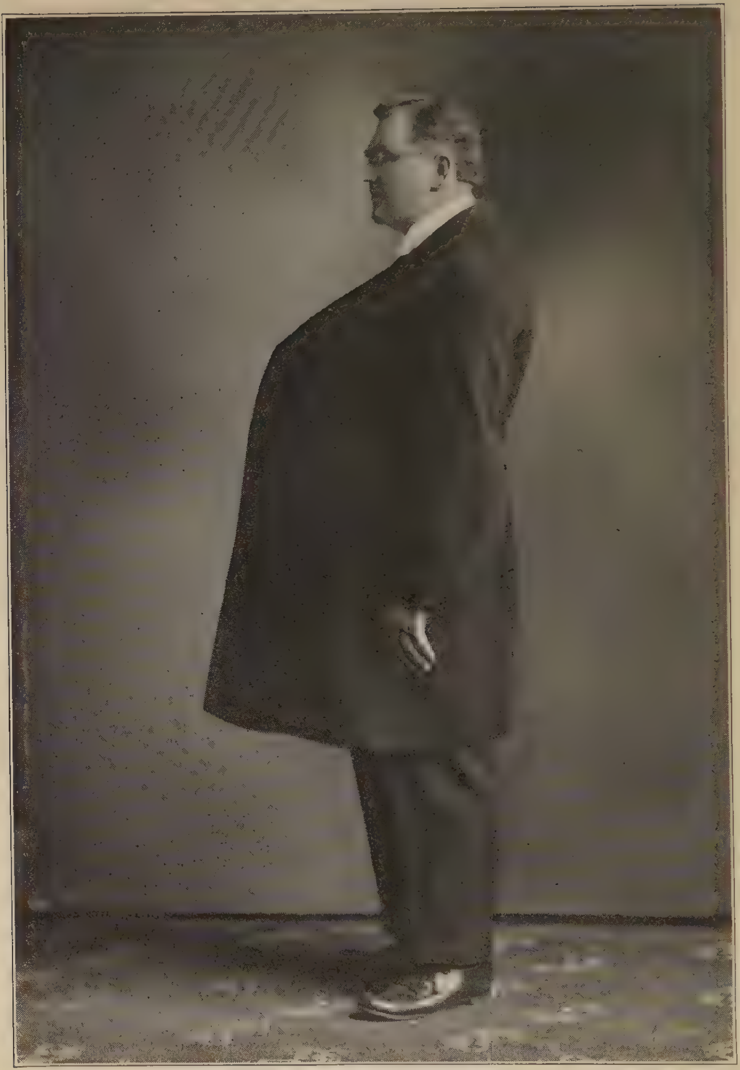
Exercises for the eye No. 65. Flush the eyes three times by forcing all the air possible into the cheeks, with mouth and nose closed. This should be held each time while you count five. Flushing forces the blood into the minute capillaries of the eye and stimulates the muscles and strengthens the nerves of the eye. The unused muscles of the eye become feeble and enervated, just as the arm will lose its power if you carry it in a sling. In our constant study and work we hold the eye continually in one position, exercising but one set of muscles. When we are in the open, walking the highways, threading the canyon, climbing the mountains, there is a constant change of vision and the eye wanders in all directions, exercising and strengthening the muscles and the nerves.

The student, the business man in the office, the store, the bank or the shop must have something that will compensate the eye for the lack of the varied scenery of ''God's Great Our-of-doors'' that attracts the eye in every direction, furnishing exercise for nerve and muscles.

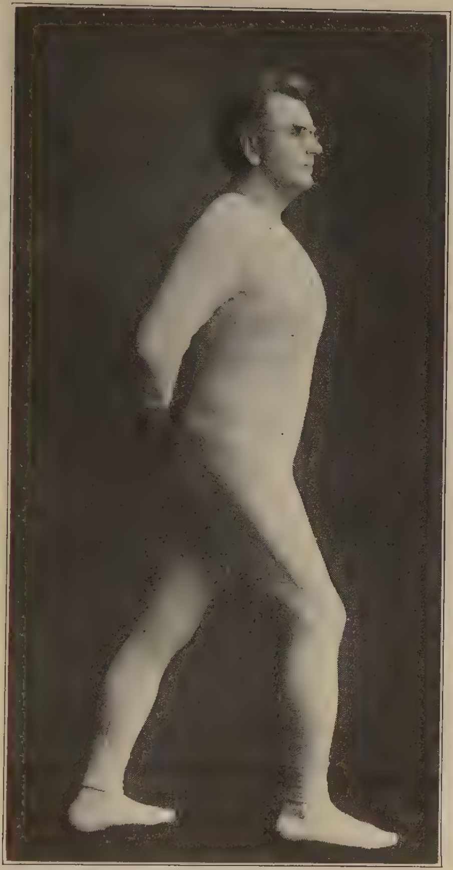
The system of eye exercises will compensate for this loss. With correct standing or sitting position, head erect and straight to the front turn the eyes far to the right, holding them as if looking at some object while you rapidly count five. Turn the eyes to the left in the same manner, holding them while you rapidly count five. Turn them upward as far as possible, holding them while you count five. Turn them downward while you rapidly count five. Turn them now to the right, then down, then to the left, then up, holding in each position while you count two. Repeat this three times. Following the same positions roll the eyes slowly from three to five times, increasing in rapidity. This will be found to be a great means of strengthening the eyes.

J. C. ELLIOTT

This picture was taken and published in the Los Angeles Express in 1909 just prior to the nervous breakdown of the author. His weight 246 pounds, waist line 53 inches.



J. C. Elliott, before practicing the principles of the New Health Conscience, weighing almost two hundred and fifty pounds.



J. C. Elliott, June, 1915; at the close of an absolute fast of twenty days. Weight 160 pounds, waist line 35 inches.

J. C. Elliott after practicing the principles of the New Health Conscience, weight 160 pounds, waist line 37 inches.

# OBESITY—ITS CAUSE AND CURE

*"Fat paunches have lean pates, and dainty bits*
*Make rich the ribs, but bankrupt quite the wits."*

SHAKESPEARE.

*"And by his side rode loathsome gluttony,*
*Deformed creature, on a filthy swine;*
*His belly was up-blown with luxury,*
*And eke with fatness swollen were his eyne."*

SPENSER.

*"Gluttony is the source of all our infirmities and the fountain of all our diseases. As a lamp is choked by a superabundance of oil, a fire extinguished by excess of fuel, so is the natural heat of the body by intemperate diet."*

BURTON.

Obesity is man's most insidious foe. It steals upon him by stealth in the guise of a friend. Like Judas it plants the betrayer's kiss upon the cheek with the salutation of a friend. Like Brutus it plunges the concealed dagger in the heart of its bosom friend.

### A DISGUISED FOE

Who is not glad when the soft velvet cushion of fat steals over the angular form smoothing out the wrinkles wrought by care and anxiety, rounding out the bony form, cushioning the pinacles, bridging the chasms and leveling up the valleys until the whole body presents a beautiful symmetrical appearance. Your heart leaps for joy in the achievement of a realized ideal of a beautiful symmetrical form. You congratulate yourself that never again are you to be known by that endearing name of "Skinny." Your friend congratulates you on your fine appearance. Your cup of joy is full and overflowing. Your health is perfect. You are admired as a symbol of health and beauty.

### TREACHERY AND BETRAYAL

Time's measured steps note a change. You are really taking on superfluous flesh. It is really marring your symmetrical form. Your face is puffing, your waist line is bulging, your chin is drooping, your sprightliness and grace is falling. The current of your blood stream is clogging and becoming sluggish. Your clear, keen incisive brain and intellect is growing dull, and your memory is failing and betraying you. A little exertion forces you to pant for breath and your heart throbs as under a heavy load. Your gait is more sluggish than your heart and brain. Your beauty, grace and symmetry are fading away.

Your flesh has become a burden and your friends are coming to know you by that endearing name of "Fatty." You have outgrown your class. You now belong to that unenviable class, bearing as penance for over-indulgence in food, the burden of surplus flesh which continually drags you down and makes life a burden rather than a joy.

### DANGERS OF OBESITY

The fat man may well exclaim with Woolsey:

*"Farewell, a long farewell to all my greatness:*
*This is the state of man: today he puts forth*
*The tender leaves of hope: tomorrow blossoms,*
*And bears his blushing honors thick upon him:*
*The third day comes a frost, a killing frost,*
*And when he thinks—good, easy man—full surely*
*His greatness is a ripening, nips his root,*
*And then he falls as I do. . . . . .*
*And when he falls, he falls like Lucifer,*
*Never to hope again."* SHAKESPEARE.

The dangers of obesity are at first not apparent. This insidious foe creeps on us so stealthily, and under such deep disguise that we do not recognize his mailed hand. We are firmly within his iron grasp ere we know his deadly mission. He has robbed us of our beauty and symmetry of form, he has stolen away our grace and our vivacity, he has dulled our intellect and ambition, he has congealed the life current in our capillaries and arteries, as it flows through the blood stream of a thousand miles. He has also piled layer upon layer of fat around that great central dynamo of life, the human heart, and is tugging at the heart strings in an endeavor to crush this marvelous human dynamo.

It is only a question of time when this central dynamo must be crushed and smothered out by this insidious foe with his ever creeping folds of fat. Thousands fall as his victims from fatty degeneration of the heart.

### OBESITY THE PRODUCT OF APPETITE

Hunger is man's greatest friend. Appetite is his basest enemy. Taste and hunger would select man's food supply on a scientific and hygienic basis. Normal appetite would form an alliance with these friends for the preservation of the body. Ignorance, abuse and wilful neglect have debased and depraved appetite until it has become man's deepest curse. Man's appetite for strong drink has wrecked his fortune, his home, his happiness, his life. It has dethroned his reason, destroyed his will, dulled his intellect and damned his soul. Man's depraved appetite for food is almost as pernicious as his appetite for strong drink.

The curse of depraved appetite for food gnaws at man's vitals until it destroys the grace and beauty of his form by superfluous food. This superfluous food supply dulls and deadens the intellect, curbs his ambition, congeals the life blood in his arteries and veins and poisons the cell life of tissue, nerve, muscle, bone and brain. The poisonous gases from the decaying amount of surplus food which can neither be digested nor assimilated is carried throughout the whole system by the circulation of the blood and poisons, and stupefies the whole body as well as the brain.

## OBESITY A DISEASE

*"Let me have men about me that are fat,*
*Sleek-headed men and such as sleep o' nights.*
*Yond' Cassius has a lean and hungry look:*
*He thinks too much: such men are dangerous."*
SHAKESPEARE.

Obesity is a disease. The corpulent man is a sick man. Obesity is not always synonymous with gluttony. Ofttimes the thin person is a heartier eater than the fat person. Obesity has many virtues. Ofttimes it is the product of good nature, good disposition and a good conscience. "Laugh and grow fat" has in it more truth than poetry. Some of the sour "Slim Jims and skinneys" would do well to heed this admonition.

While it is true that "Nobody loves a fat man" simply for his fat, yet they do love his mirth, his sunshine, his good cheer and his disposition of "Hail fellow well met." While this is all true, even his friends would love him better without his fat. There is always a feeling of pity mingled with love for the fat man. While I am writing about the fat man I would have it distinctly understood that in this case especially "Man embraces woman." The great burden of the fat man falls upon himself. He carries around from 50 to 200 pounds of superfluous fat, which he does not want himself and which he cannot give to "Skinny Slim Jim," even though both would pay liberally for the exchange. Like Shylock they covet his "Pound of flesh," but like Shylock they are powerless to take it. The fat man may post the sign "Free dirt. Help yourselves." Slim Jim may covet the surplus with all the desire of his "Skinny" being, but he is powerless to appropriate a single pound of the surplus fat.

### PERSONAL EXPERIENCE

I can write freely on this subject because I have "Inside Information" on the fat man. At thirty years of age in mature manhood I weighed 145 pounds. I saw the fat creep over my body, inch by inch and pound by pound, until I reached almost 250 pounds. I grew a balloon that could rise but could not fly. My waist line developed from 32 to 53 inches. I could not see my feet to know even if my shoes were shined without special effort. I could not see where I was stepping as I placed my feet. I literally "walked by faith and not by sight."

I could use my balloon either for an arm rest or for a writing desk. As a public speaker I "carried everything before me." Yet I was not alarmed at my condition. I did not know the dangers that threatened me. In my public addresses perspiration ran from my face in streams, and my clothing was drenched. I would drown three or four handkerchiefs in a single address. My collars melted like snow and my shirt bosoms wilted as grass in the burning sun. This copious perspiration probably saved my life during the years of public speaking under this burden of flesh.

### IGNORANT OF GRAVE DANGERS

I was not alarmed because I was ignorant of the grave dangers of superfluous flesh. I thought with many others, it was natural for me to be fat. I did not know that I was violating every law of health in diet, in my lack of exercise, in my neglect of bathing. Oh, yes, I bathed twice a week. Think of it. Twice a week. I did not belong to the unwashed. I thought I was a lavish, extraordinary bather. Actually some people bathe every month and some every two months. Some make their baths like interest, payable quarterly, semi-annually or annually.

### STARVING FOR OXYGEN

I did not know that I was slowly committing suicide by my lack of breathing. I did not know that I was living on a tidal breath of less than 50 cubic inches of air with each inhalation, when Nature's demands are 100 cubic inches for health. I did not know that I had only three inches in chest expansion, when no man can be healthy on less than five and one-half inches in chest expansion, and that I needed eight inches instead of three inches. I did not know that I had only about 200 cubic inches of vital lung capacity, when Nature demands that I should have from 300 to 350 cubic inches in vital lung capacity. Oxygen is life. Lack of oxygen is death.

### TRANSGRESSION IN DIET

I did not know that I was eating three times the amount of food necessary to sustain my body, although I had studied medicine before I studied theology. Diet in the study of medicine is like the English Bible in the study of theology, it occupies a small place. I did not know that by eating a heavy breakfast every morning I was digging my grave with my teeth, yet such was the case. I did not know that the abnormal amount of food taken into the stomach could neither be digested nor assimilated. I did not know that two-thirds of the food I was eating had to literally rot or decompose in the intestines and the colon, the waste basket of the digestive tract. I did not know that this decaying of the surplus food in the intestines, generated poisonous gases that were carried by the circulation of the blood, to every cell of tissue, nerve, muscle, bone and brain, poisoning the whole system and filling the whole body with fatigue germs, deadening the intellect with a drowsiness that will not shake off, try as you may to produce your best intellectual effort.

### INHERITED A STRONG CONSTITUTION

I was ignorant of all those calamities that were following hard and fast upon my track. I thought because I had inherited a strong constitution, and had not a sick day in thirty years, these conditions would always prevail. I was doing almost two men's work, as a pastor in my regular work of church building, evangelistic services, Chautauquas, camp meetings and conference work. I believed I was equal to my emergency, and only laughed at the suggestion of my friends that I was over-working. I believed that I was armor-clad against all these dangers from which so many of my co-workers had fallen.

### FIRST ASSAULT

My first assault came upon me from my ignorance, neglect and abuse of the body, in the lack of proper breathing, bathing, exercise and diet. It came in the form of a "stitch in the back." This would last two or three days, I would go with cane or crutch until recovery. Rheumatism followed these assaults and I again resorted to cane and crutches for a few days and relied on the cane for six months.

Diet and osteopathy relieved this some, but soon as I was better I supposed the necessity for special diet had passed, and I returned to former conditions. I waxed fat, kicked little, ate much, breathed and bathed sparingly, with the conventional semi-weekly baths.

### THE CRISIS

I worked incessantly, but the chariot wheels began to drag heavily. I found a drowsiness creeping over me in my study. My brain was not clear as formerly. Fatigue crept upon me. I attributed all this to overwork. The final crash came like a bolt out of the blue sky. My surplus flesh wearied me. My memory failed me and often betrayed me. My head reeled with dizziness, blood settled in the ears and in the sides of my face until they were perfectly black. On arising in the morning I could walk only as I steadied myself with my hands on the wall. Many of my mother's people had gone with apoplexy, and some believed my time was near at hand. I myself believed my days of service were ended. I believe today they were numbered, and that had I not found relief I should never have been able to take up my work again.

I surrendered my position as pastor of the Haven Methodist church, Los Angeles, by consent of the District Superintendent, Dr. Francis M. Larkin, and Bishop Edwin H. Hughes, December 31, 1909.

### BREAKING OF THE DAWN

Incidentally there came to me a new vision of the care of the body. I was president of the Methodist Preachers' meeting of Los Angeles, and was succeeded by Dr. Matt S. Hughes. About 200 ministers of Southern California were to hold a health campaign in Los Angeles. Dr. Matt S. Hughes was selected as president, but as he lived in Pasadena he was unable to attend the daily meetings in Los Angeles. I was elected in his place to manage the campaign. This was a short time previous to my breakdown. I became interested in the work, but did not take it very seriously at first. When I began failing I began to study the health problem more seriously. I preached three sermons on the subject of the care of the body. One on "Know ye not your body is the temple of the Holy Ghost?" I Corinthians VI:19. The second on "If any man defile the temple of God, him will God destroy: for the temple of God is holy, which temple ye are." I Corinthians III:16. The third on the "New Health Conscience." For about two years after my nervous breakdown I traveled throughout the United States with a health lecturer. As manager I presented the work to the ministers in the larger cities, and also to the editors and managers of the press. I arranged for the evangelistic health campaigns, that crowded to the doors the largest auditoriums of the United States. I also conducted the ministers' classes.

### INTENSELY INTERESTED IN HEALTH

I became intensely interested in the problems of health. I read all that I could find on the care of the body along the lines of breathing, bathing, diet and exercise. My own health was perfectly restored. My weight was reduced from almost 250 pounds to 175 and my waist line reduced from 53 inches to 37 inches. I returned to my conference fully restored to health and vigor. Bishop Edwin H. Hughes appointed me as Field Superintendent of the Methodist Hospital of Southern California. For the past three years I have been able to work from 12 to 16 hours per day, in providing for a new building. The contract has been let and the administration building with 145 feet frontage on Hope street and six stories in height is now completed. The site and the administration building has cost over $200,000. Two other buildings will be constructed in the future which will cost more than $100,000 each, making a total expenditure of more than $400,000.

### FULLY RESTORED TO HEALTH

My general health has never been better than at the present time. I feel that I owe it all to the system of health culture as outlined in this book. My friends declare I look fifteen years younger than I did five years ago when I was compelled to give up my work because of a nervous and physical breakdown. This change is due to the scientific observance of the principles of health as advocated in this book.

The scientific breathing, the hygienic bathing, the principles of diet and the health exercises have been the means of my complete restoration to health and vigor. My endurance has become phenomenal.

### NATURE'S OWN METHODS

I am enthusiastic on this method of reducing the surplus flesh, because it is Nature's own method. It contains no harmful drugs. It can be taken by all classes. It is a symmetrical system. It improves every part and portion of the whole body. Every tissue cell, every nerve cell, every muscle cell, every bone cell, every brain cell will be stronger because of the adoption of this system. Even though the reduction of surplus flesh should fail, and it will not, the system is worth while from a health standpoint, regardless of the reduction of surplus flesh. Thousands of dollars would be no inducement for me to give up the care of the body along the lines of hygienic principles because of what it has done for myself and my family. Aside from the reduction of surplus flesh the system has been a benediction to us all.

### AN INDEPENDENT SYSTEM OF REDUCTION

My system for the reduction of surplus flesh will be found different from all others. My system of reduction builds and strengthens and invigorates the body, at the same time of the reduction of the surplus flesh. Many systems weaken the body by harmful drugs. Avoid them.

### OUTLINE OF PRINCIPLES

*"Hereditary bondsmen, know ye not:*
*Who would be free themselves must strike the blow?*
*By their right arms the conquest must be wrought."*

The principles of the reduction of surplus flesh as advocated by the New Health Conscience, include an entire system of health culture. Obesity is a disease. There is but one cure for disease—the removal of the cause. Any system for the reduction of surplus flesh or for rebuilding flesh, which is not based on the foundation principles of health for the whole body is an absolute failure. This is why many reputed systems for the reduction of surplus flesh are absolute failures. They aim simply at the reduction of surplus fat, regardless of the effect on the whole body. Many prescribe harmful drugs that destroy the health of the vital organs of the body. They impair the digestive organs, destroy assimilation, they derange the liver and kidneys, while many of them seriously affect the heart.

### DANGERS OF DRUG SYSTEMS

The drug system for the elimination of surplus fat is a very dangerous system, unless used under the specific direction of your family physician, in whom you have absolute confidence. A so-called flesh reducing system was recently exposed in the courts at Los Angeles in which the principle means for the reduction of flesh was alum. Think of filling the system with alum for the reduction of surplus fat. Many other systems are but little better. They furnish the drugs to reduce the flesh at the expense of the whole body.

### PRINCIPLES OF THE NEW HEALTH CONSCIENCE

The principles advocated by the New Health Conscience for the reduction of surplus fat are absolutely revolutionary, in that they cover a whole field in a health education in simple outline. Its primary principles are health building. The methods advocated will not only reduce the surplus fat, but they lay a broad foundation of health for the whole body which will bring not only health and happiness, but which will reduce your surplus fat and add from ten to twenty-five years to your life as well. This true system of Nature nourishes and builds the whole body. It affords prevention as well as cure for surplus fat. It has laid the broad foundations for natural health building. The organs of the body have been put in a normal condition. Following up these foundation principles, a change in the food supply will transform this system into a flesh building system. The foods we eat and the life we live fashions our bodies. Food has a marvelous transforming power. Another change of diet transforms the anaemic. It furnishes a general supply of rich red blood for rebuilding the waste and broken down cells of the body, on this diet health supplants disease.

### DISORDERED NERVES

Another system of diet and exercise will rebuild the disordered nerves of the whole body and transforms our whole being. Other combinations of food in connection with breathing, bathing and exercise, will furnish relief for colds, catarrh, la grippe, pneumonia and tuberculosis.

Prevention of sickness is the word of the hour in medical and scientific circles. The normal care of the body along these indicated lines and especially the selection of medicinal foods will furnish relief for the dyspeptic, for stomach trouble, liver trouble, kidney trouble, heart disease, fatigue and brain fag. Health is the product of the normal care of the body along the lines of breathing, bathing, diet and exercise. The reduction of surplus fat is based on the same broad principles of health, together with special instruction in breathing, bathing, diet and exercise. It means a health education.

### BASIC PRINCIPLES

The following are the basic principles for the reduction of surplus fat as advocated by the principles of the New Health Conscience:

*I. Breathing.* This means scientific breathing. It means the securing of at least five and one-half inches chest expansion. It means a tidal breadth of from 75 to 100 cubic inches of air with each inhalation, instead of from 30 to 50 cubic inches upon which the ordinary individual is living or trying to live at the present time. Scientific breathing will produce from 250 to 350 cubic inches of vital lung capacity instead of from 150 to 250, upon which many are endeavoring to live at present. It means sufficient air to fill the 725,000,000 air sacs of the lungs so that they may provide sufficient oxygen to purify the blood, feed the cell life and eliminate the poisonous carbonic acid gas from the body.

*II. Bathing.* This means hygienic bathing. Not the conventional weekly, monthly or semi-monthly bath, but genuine hygienic bathing for health. The demands of health are for daily abolutions, for minute care of the whole body on the same basis that you care for the face. This normal care of the body is rendered necessary by the abnormal conditions under which we force the body to live. It is rendered necessary by our modern steam and furnace heated houses and our abnormal amount of clothing. To atone for these unnatural conditions the body must have daily a series of baths. It must have the friction bath, the air bath, the sun bath, the sweat bath, the hot water bath and the cold water bath. The thirty miles of sewage on the surface of the body, emptying their poison through the more than 3,000,000 pores of the skin, must be kept open for the elimination of the poisons that should be drained from the body by this thirty miles of sewer system, also for the breathing in of oxygen through these miniature lungs of the body, the pores of the skin and for elimination of carbonic acid gas.

*III. Exercise.* This means a complete system of hygienic exercise for the whole body, so that every organ of the body may be in a healthful condition. So that every cell of tissue, nerve, muscle, bone and brain may neither be sluggish nor diseased. So that there may be a perfect circulation of the blood to every organ of the body to nourish and sustain it. So that all poisons may be eliminated from the vital organs and they may be preserved in a healthful condition. Stagnation means death. Activity means life.

*IV. Diet.* This brings us to the crux of the whole matter. Diet is the key to health. Food and combination of foods, their selection as to quality and quantity holds the real secret of health and life. The selection and combination of foods not only holds the key to health and life, but they hold the key to the reduction of our surplus fat. They hold the secret for the prevention and cure of disease. They not only hold the secret for the reduction of surplus fat, but they also hold the secret for the prevention of the accumulation of fat. The selection and combination of foods hold the secret for the accumulation of flesh. The selection and combination of medicinal foods hold the secret for prevention and cure of gout, lumbago and rheumatism. For the prevention and cure of dyspepsia, indigestion, constipation and malnutrition. They hold the secret for the prevention and cure of colds, catarrh, la grippe, pneumonia and tuberculosis. They hold the secret for the prevention and cure of liver trouble, kidney trouble and heart trouble. All these diseases are largely the product of improper diet. The diet necessary for the reduction of surplus fat, and for blood building, and for flesh building are especially treated in this book. The food analysis and menus, as well as the foods to be used for the prevention and cure of special diseases will be found especially helpful. There is no thought of eliminating the physician in the suggestion of the selection of foods for the prevention and cure of certain diseases. These suggestions are to guide and direct you before you need a physician. Always consult your physician in serious cases.

*V. Mind Attitude.* Physicians tell us that 75 per cent of our diseases are caused by the mind. This does not mean that they are imaginary diseases. It does not mean that they may be cured by a proper attitude of the mind. The mind has a marvelous power over the body. The attitude of the mind can destroy the digestion and assimilation of food. Anger, fear, hatred, jealousy, worry, excessive grief will not only destroy digestion and assimilation of our food supply, but it will stop the flow of all the digestive juices. If you doubt the power of the mind over the stomach imagine you have swallowed a fly and see how quickly you will lose your appetite and possibly your dinner as well.

In studying the prevention and cure of disease of the human body, whether studying from a purely medicinal standpoint or studying the care of the body in Nature's own channels of breathing, bathing, diet and exercise, we must not fail to reckon with the power of the mind over the body. It wields a marvelous influence for good or bad. We shall now take up a brief study of the process of the reduction of surplus fat along the lines indicated in this brief outline of the system.

# SCIENTIFIC BREATHING

Oxygen is life. Man can live weeks without food, days without water, but only moments without oxygen. The diver in ocean's depths finds his doom is sealed the moment his supply of oxygen is exhausted. Scientific breathing means a generous supply of oxygen. Health demands a hilarious breather. An individual who delights in generous breathing. Man needs five and one-half inches chest expansion for scientific breathing. He needs 250 to 350 cubic inches of vital lung capacity. He needs 75 to 100 cubic inches of a tidal breath to properly fill the 725,000,000 air sacs of the lungs. This is essential to preserve the lungs from decay in these air sacs. When these air sacs are filled with air the oxygen filters through the walls of the air sacs as smoke filters through a lace curtain. This furnishes the supply of oxygen for the red blood corpuscles and also for the white blood corpuscles.

## OXYGEN AND THE BLOOD

The 30,000 millions of red blood corpuscles of the blood carry this oxygen to every part of the body. Every cell of the body must feed on oxygen as well as on the food supply carried to the cell life by the blood stream. The oxygen meets the food supply in the cell and immediately the combustion or oxidation takes place. This generates heat and energy necessary for the demands of the body. This burning of oxygen in the cell consumes the fat and prevents its accumulation in the body. It generates out of this fat the heat and energy demanded for the supply of the body. Lack of oxygen means failure to consume the fat and sugar in the cell life, and the result is the accumulation of fat in the body. Corpulency and obesity are the inevitable results.

## RED BLOOD CORPUSCLES

The mission of these millions of red blood corpscles is not only to carry oxygen for the feeding of every cell of the body, but they act as both sewers and smoke-stacks for the body. They gather up the smoke, fumes and ashes from the combustion or burning of the sugars and fats in the cells of the body, and carry it back through the veins to the heart and the lungs for elimination. The carbon from this combustion forms carbonic acid gas, the red blood corpuscles carry this carbonic acid gas to the lungs, here it meets the tissues of the side walls of these millions of air sacs and filters through them as smoke filtering through our lace curtains, and is carried off by the exhaled breath. The sewage from the cell life is carried through the blood vessels to the liver and kidneys, which serve as a reducing plant for the garbage and sewage of the cell life, eliminating this in the form of bile and uric acid. The kidneys alone have fifteen miles of sewage for this elimination.

## OXYGEN A BLOOD PURIFIER

Oxygen is the only real blood purifyer. It consumes the sugar and fat by combustion in the cell life. It burns up the surplus fat of the body. It develops the lungs and makes them armor-clad against the deadly disease germs of colds, catarrh, la grippe, pneumonia and tuberculosis. Breathing is the first principle in the reduction of surplus fat because it purifies the blood and consumes the surplus fat. Oxygen is not only life, it is death to surplus fat. Nature's own best blood purifyer is an abundant supply of oxygen and the mineral salts found in lettuce, celery, raw cabbage, raw tomatoes, apples and spinach. You must breathe lavishly for health, and especially for the reduction of surplus fat.

## THE ART OF BREATHING

Breathing is an art. With most people it is a lost art. We will never learn to breathe by breathing. Our chest walls become set and rigid, bound as by ligaments strong as steel. The lungs are bound too strongly for air pressure to release their bands. Mechanical manipulation is an absolute necessity to loosen up the chest walls. We do this by scientific exercise. We can do more to obtain a proper breathing capacity in thirty minutes of scientific manipulation of the chest and abdominal walls than in months of attempted forced breathing. Scientific breathing will not only reduce the surplus fat, but will give you new life and vigor and a condition of health you never before possessed. It will revolutionize your whole being.

In breathing for the reduction of surplus fat you should practice the following breathing exercises faithfully ten minutes in the morning, ten minutes at noon and fifteen minutes in the evening. It is better to practice them out in the open air. If this cannot be done practice them by an open window.

### BREATHING EXERCISES

The whole economy of life and health depends on a sufficient supply of oxygen to purify the blood. The purity of the blood depends on sufficient oxygen to surcharge the red blood corpuscles so that they may carry an adequate supply of oxygen for the white blood corpuscles, those mighty wandering warriors of the blood stream, to fill them with strength and vigor, alertness and energy, so that they will assault and slay every disease germ that enters the body. Our health demands sufficient oxygen in the blood to feed every cell of the body with sufficient oxygen for the combustion or oxidation of the food in the cell life, to generate heat and energy to maintain the bodily functions and provide heat and energy for bodily strength and vigor. In the reduction of flesh the body absolutely demands sufficient oxygen to burn up the surplus fat in the cell life.

### PREPARATION FOR BREATHING EXERCISE

The first essential for scientific breathing is to empty the lungs of the poisonous, polluted, vitiated air which they contain. Assume correct standing position. Feet flat on the floor. Hips well back and chest even with the toes. Chest and shoulders up and head erect. Inhale to the fullest capacity of the lungs. Exhale all the air you can force out of the lungs by breathing. Repeat this five times. With the last breath, when you have exhaled all the air possible from the lungs, by natural exhalation, without taking another breath, form a small funnel with the thumb and fore finger, placing this over the mouth, blow softly as long as you can continue to force any air out of the lungs. Then inhale slowly to the fullest capacity. This eliminates all the poisonous air from the lungs and fills them with pure fresh air. Repeat five times.

### CAPACITY OF THE LUNGS

The actual vital lung capacity of a fully developed lung or a pair of lungs is from 200 to 350 cubic inches. The tidal breath, the ordinary breath is, from 30 to 50 cubic inches. This should be increased to form 75 to 100 cubic inches for each tidal breath. We can exhale by effort about 150 cubic inches of air from the lungs, by the above suggested effort we can exhale about 100 cubic inches additional of the "reserve air." This is the poisonous, polluted air that usually remains in the lungs. We must force this poisonous air out of the lungs by the blowing process before we begin our breathing exercises. When we have done our best to expel all the vitiated air from our lungs there still remains about 100 cubic inches of polluted air in the lungs. This we purify by our breathing exercises. By using the funnel breathing five times we practically exhaust all this "residual air" from the lungs, and they are supplied with pure fresh air. We are now ready for our regular breathing exercises.

## BREATHNG EXERCISES FOR REDUCTION OF SURPLUS FLESH

Breathing exercise No. 5. Page 81. Expansion of Chest Walls.

Breathing exercise No. 6. Developing Vital Lung Capacity.

Breathing exercise No. 7 and 8. For Chest Expansion and Lung Capacity.

Breathing exercise No. 10. For Expanding Chest and Lungs.

Breathing exercise No. 11. Abdominal Breathing—Strengthening Diaphragm.

Breathing exercise No. 12. Relieving Gas Pressure by Breathing.

Study well the cuts and read carefully the instructions for the above breathing as you practice them for the reduction of surplus flesh. The exercises should be taken in the open, or when this cannot be done take them by an open window. Breathe deeply and lavishly as you walk in the open. This furnishes sufficient oxygen to purify the blood, feed the cell life and consumes the surplus fat by oxidation. It also eliminates the poisonous carbonic acid gas. It places the whole body in a normal healthful condition. It eliminates the disease which produces the surplus fat. Oxygen starvation is one of the prime causes of surplus fat. The more pure oxygen we breathe the purer our blood becomes. The more pure oxygen we breathe the larger the consumption of surplus fat in generating the necessary heat and energy for the demands of the body. Be a lavish and hilarious breather and you will consume much of your surplus fat. Remember we receive no nutriment from the food carried to the cell life until that food is burned in the cell by the oxygen carried from the lungs. Oxygen is Nature's own best blood tonic and purifier. Where there is pure blood there can be no disease. An abundance of pure oxygen is the first step in the elimination of surplus flesh.

### ABDOMINAL BREATHING EXERCISES

This is one of our most important breathing exercises for health as well as for the reduction of surplus flesh. It is best practiced while lying on the back in repose. Place the hand on the abdomen without pressure, just to follow the breathing with the diaphragm. Force all the air out of the lungs, allowing the abdomen to slowly recede, and when you have forced out all the air you can by breathing, use the funnel breathing exercise, thus forcing all the air possible from the lungs. Inhale slowly to the fullest capacity of the lungs, watching the distending of the abdomen as the air forces the diaphragm downward. Repeat the exercise ten times while lying on the back. Then stand and repeat the exercise ten times standing, following the movement of the abdomen with the hand without pressure. Be sure of correct standing position, hips well back, chest on line with the toes, chest and shoulders up.

This strengthens the abdominal muscles, develops and stimulates the diaphragm, strengthens the supporting muscles holding the abdomen, teaches true diaphragmatic breathing and increases the circulation of the blood. It also aids in destroying the surplus fat of the body.

# HYGIENIC BATHING FOR HEALTH

Hygienic bathing is one of our most important factors in the preservation of the health of the body, as well as for the reduction of superflous fat. The skin is the thermometer of the body. You cannot maintain a healthful body unless you maintain a normal condition of the skin. The reason for this has already been cited, as the abnormal conditions under which we live. Our steam heated homes and our abnormal clothing, consisting of from two to ten thicknesses. Man is not a hot house plant. He was created for the fresh air, the bright sunshine, the cooling mists, fogs and gentle showers. Man's skin is an outdoor plant. The air bath, the sun bath, the friction bath, the hot water bath and the cold water bath have been rendered necessary for a healthful condition of the skin because of these abnormal conditions.

## THE SKIN AND THE BATH

The skin is one of the chief organs for the elimination of poisons from the body. It contains thirty miles of sewage emptying its poisons on the surface of the body, through the more than 3,000,000 pores, or miniature lungs, of the skin. The skin of the average person weights about 17 pounds. It can hold one-half the entire blood supply of the whole body. The outer skin of the body is called the epidermis, and the inner skin, that lining the throat, lungs, stomach and vital organs is called the epithelial. We have about 17 square feet of the epidermis covering the outer body. There is about 80 square feet of epithelium lining the digestive tract, and about 2000 square feet lining the air passages of the lungs. The scientists tell us that we breathe one-thirtieth as much oxygen and exhale one-thirtieth as much carbonic acid gas through the pores of the skin as through the lungs. They also tell us that the entire drainage area of the skin is more than 32,000 square feet, and that there is emptied on the surface of the skin daily one quart of perspiration from the thirty miles of sewage emptying on the surface of the body.

## FUNCTION OF THE SKIN

The function of the skin is to protect the tissues of the body. To preserve a uniform temperature. To lend stimulant to the body through atmospheric pressure, friction, heat and cold. To eliminate poisons and furnish oxygen through the breathing pores of the skin. These important functions of the skin render this series of baths an absolute necessity. The air bath and the sun bath are taken while you are having your exercises preparatory to the morning hot and cold water bath. The sweat bath must come at least three times per week for opening up the pores of the skin, while the friction bath will eliminate the dead cells from the surface of the body. Millions of these cells die daily. Sometimes when you take your water bath, you find on rubbing the skin that little rolls keep flaking up from the skin. These are the dead cells that have been crowded out by the new living cells. Your body has become a cemetery of dead cells, not only dead cells, but unburied corpses. Yon can not be healthy and be a graveyard at the same time.

## BATHING AN ABSOLUTE ESSENTIAL

It is impossible to be healthful without hygienic bathing. It is impossible to reduce your surplus fat unless you properly bathe and cleanse the skin. This means more than the weekly, monthly, semi-annual, or annual bath. It means the daily bath, which includes the air bath, the sun bath, the friction bath, the sweat bath, the hot and cold water bath. The sweat bath, the hot and cold water bath are the most important for flesh reduction. The others must be taken during the reduction of surplus fat to preserve the general tone and health of the body. The friction bath is taken the first thing on arising in the morning. Rub the body thoroughly with a rough towel, then with a good stiff flesh brush. This is followed with your breathing exercises, then your general exercises, which will be given at the close of this article on bathing. You are now ready for your hot and cold water baths.

### EXERCISE, HOT AND COLD WATER BATHS

The skin can hold half the entire blood supply of the body. Exercise brings the full blood supply of the skin to the surface. The exercise forces the circulation of the blood through the whole body. Every working muscle dispatches the heart over the nerves, for a larger blood supply. The heart throbs a little faster and forces an additional blood supply to the muscles. The hot bath forces the entire half of the blood supply into the skin. The cold bath forces the blood supply from the skin back to the internal organs. This enforced action of the blood by the exercise, the hot bath, and the cold bath, flushes the whole thousand miles of the blood stream, cleaning out the arteries, the veins and the capillaries, and with the increased supply of oxygen from the exercise, the whole blood stream is purified, and the whole body is stimulated with new life and vigor. The sugars, fats and starches are burned up in the cell life by the additional supply of oxygen. The surplus fat is rapidly reduced.

### SCLEROSIS, OR HARDENING OF THE ARTERIES

Sclerosis, or hardening of the arteries, is caused by the filling up of the arteries with mineral matter when the blood becomes sluggish, just as our water pipes fill up with lime when we run lime water through them. The breathing, the exercise, the bathing, flushes these arteries and thoroughly cleanses them, and thus avoids the crisis that must inevitably come from hardened arteries. I was one day in the surgery when a major operation was on. The surgeon said to me, the arteries of that patient are thirty years older than the patient. He said, ''Let me show you.''

He took a small piece of an artery in his flesh forceps and pressed it a little, when it popped like a straw, instead of pressing together with elasticity as it should. Breathing and bathing flush the arteries and capillaries and prevent this hardening of the arteries. Exercise is also a splendid preventative of hardening of the arteries.

### OBESITY AND THE ARTERIES

The hardening of the arteries is one of the great dangers of obesity. When the arteries become hardened and there comes a little additional blood pressure, the arteries, or capillaries, burst, and if this happens to be in the brain, it means apoplexy, and ofttimes death. The breathing, the bathing, the exercise and the diet remove the high blood pressure, flush the arteries and capillaries, remove the surplus fat from around the heart, and ofttimes add from twenty to twenty-five years to the life. No man dares to brave the dangers of corpulency and obesity when they may be so easily avoided, and so easily reduced when already accumulated. The cold bath is one of our most efficient means of reducing surplus flesh. The following exercises, necessary to warm up the body for the morning bath, are also great aids in the reduction of surplus fat. They are also very efficient in hardening the muscles and building muscle, instead of surplus fat.

## PREPARATIONS FOR THE MORNING BATH

Read carefully the article for Hygienic Bathing, page —. Take the friction bath and the brush bath, rubbing the body vigorously. Take the breathing exercises for the reduction of surplus flesh.

Exercise No. 7. Developing chest expansion—increasing lung capacity.

Exercise No. 8. Increasing vital lung capacity—stimulating circulation.

Exercise No. 15. Massaging the liver, stomach and kidneys.

Exercise No. 33 and 33a. Massaging all the vital organs of the body.

Exercise No. 17. Heavy massage of all the vital organs of the body.

Exercises Nos. 21 and 22. The liver twister. Forcing impure blood from the liver.

Exercise No. 18. Stimulating the kidneys. Massaging muscles of the back.

Exercise No. 23. Floor work for stomach, liver and kidneys.

Exercise No. 26. Strengthening abdominal walls, local organs, and kidneys.

Exercises Nos. 24 and 25. Heavy massage for liver, kidneys and stomach.

Exercise No. 39. Massaging involuntary nerve centers. Breaking up adhesion.

Exercise No. 27. Strengthening abdominal muscles for support.

It is not necessary to take all of these exercises in preparation for the morning bath. You should never exercise until you feel exhausted. If the heart is weak you should begin your exercises moderately, and increase the strenuousness of the exercise gradually. The more exercise you are able to take the more rapidly you will reduce your flesh. You should have sufficient exercise to start the perspiration before taking your morning cold bath, to insure proper reaction. Should you fail to react quickly from your cold bath, use a warm bath preceding the cold. Some find it necessary to begin with the hot towel bath, following this with the cold towel bath, for a week to begin with. The cold bath should be used every morning.

## BATHING AND EXERCISING

In presenting this system of exercises preparatory to the morning bath, we do not mean that you are to take all of them at one time. You will notice that in presenting these exercises for the reduction of surplus fat, I have stated the special ills for which these exercises are beneficial. If you are suffering with indigestion and constipation, select the exercises that are beneficial for these. If you have rheumatism, select the exercises that are especially beneficial for the liver and the kidneys. You will find an index in the book that will tell what exercises to take for specific diseases. Use this in the selection of your exercise. This system of ''flesh reducing'' is a scientific and hygienic treatment of the whole body for health. The individual who wishes a general health system can follow the outline of this book, and change the diet to flesh building, and he has a complete system of health based on breathing, bathing, diet and exercise.

## FLESH REDUCING BY EXERCISE

The man who would reduce his superflous flesh needs practically the same exercise as the individual who wishes to build flesh. The exercise necessary for a healthful function of all the organs of the body are imperative in both cases. The individual who would reduce flesh must have about three times the amount of exercise that is demanded by the one desiring to increase flesh. The principal difference will come not in the exercise but in the food supply. The one must select the foods that create fat and build flesh. The other must avoid these foods and select those that are non-flesh builders. Then the added exercise, breathing and bathing, will oxidize or burn up the surplus fat, generate it into heat and energy to supply this added muscular activity.

# HYGIENIC EXERCISE

Scientific activity is life. Stagnation is death. The stagnant pool holds a deadly poison. The sparkling brook is pregnant with life, vigor, buoyancy, and animation. The blood stream of a thousand miles demands activity for purity. Nowhere does stagnation mean death more certainly than in the blood stream. The blood is the life. Diminish its quantity or impoverish its quality and you inject into it the elements of death.

The body demands a complete system of hygienic exercises for every tissue, every nerve, every muscle, every organ, and every brain cell of the whole body. Every cell of the body must be nourished and fed both by oxygen and by food carried to it in the blood stream. Exercise must stimulate the action of the heart and the demands of nerve and muscle, so that this blood stream may be like the sparkling rill, and not as the stagnant pool. The cell must feed on a fresh supply of both food and oxygen if it is to maintain health. The human body demands systematic exercise in order that the vital organs may perform their functions. It also demands exercise in order that the eliminating organs may be preserved in a healthful condition for the elimination of the accumulated poisons generated in the body.

The body demands scientific exercise, not simply for muscle building, but for health building, which is much more important. Millions are denied the privileges of "God's great out-of-doors." They are circumscribed, and confined within narrow walls. They ofttimes are forced to breathe foul and vitiated air. Millions die annually because of oxygen starvation. They are denied the healthful exercise afforded by Nature, in roaming the fields, climbing the hills, threading the canyons, scaling the mountain heights, tramping the ocean sands, or battling with the ocean waves. These persons demand an equivalent for these forbidden pleasures. They must have the exercise though denied the romantic pleasures, with all their charm and fascination.

### THE BED ROOM GYMNASIUM

The early morning walk in the fresh air and the bright sunshine is one of Nature's richest gifts to man. It is the elixir of life.

*"But mighty Nature bounds us from her birth,*
*The sun is in the heavens, and life on earth:*
*Flowers in the valley, splendor in the beam,*
*Health in the gale, and freshness in the stream."*
—Byron.

The shut-ins must transform their bedroom into a gymnasium. Some may atone for the denial of the romantic pleasures, by walking, running, chopping wood, or spading the garden. Millions are denied even these exercises. These persons must transform their bedrooms into a gymnasium. They must learn how to make out of their own body the most effective and efficient gymnasium the world has ever produced. This athletic field and gymnasium is always at your command. The strenuous life, the pressure of business, the unexpected imperative call, the society function, all are powerless to rob you of this athletic field and most efficient gymnasium. Your own will is master of the situation.

The time allotted to this exercise is absolutely at your own disposal. The first fifteen minutes in the morning, and the last fifteen minutes of the evening are absolutely at your own disposal. The exercises recommended by this system of health culture, together with the breathing, bathing and diet, are more valuable to you from a health standpoint than any gymnasium and athletic field, with their million dollar equipment. The exercises can be participated in by the whole family. It can be made a part of the evening entertainment.

### EXERCISE AND THE AGED

The pernicious teaching that we must abandon our exercise after we are thirty is one of the follies of the age. Older people must abandon the strenuous exercise for muscle building, but when they have reached this point, they have just come to the place where exercise for health is an absolute necessity. Old age is the product of stagnation rather than the product of years. Many men at 70 are younger than others at 40 because they have not allowed the blood stream of a thousand miles to become stagnant.

Scientific health exercise is the greatest temporal blessing of life to the individual who is just climbing toward his prime. It means the prime of life covering not a span, but a quarter of a century, then an evening of life with health, vigor, happiness, and peace. The tottering step, the trembling hand, the shuffling gait, the shattered nerves, the rheumatic joints, are not the complement of old age. They are the product of neglect, abuse, and ignorance. They are the product of a stagnant blood stream; the product of clogged arteries and capillaries; the product of poisoned cell life; the product of oxygen starvation; the product of an abnormal food supply and a depleted supply of exercise.

### LABOR NOT PENALTY FOR TRANSGRESSION

Many have thought that labor was a part of the penalty for the transgression of divine law. Labor was a part of man's privileges in Eden. He was "To dress and keep the Garden." It is a part of man's highest privilege today. Man must eat his bread by the "Sweat of his face," not as a part of a curse, but as part of the principles of life. Our labor-saving machinery has eliminated the toil from the muscles of the human body. Man toils today with nerve and brain cell, rather than with muscle cell. Exercise is man's best atonement for the elimination of toil from the muscle cell. Man must literally exercise or die. Over-eating and under-exercising is sounding the death knell of millions. Scientific health exercise is one of man's greatest benedictions intemporal things.

## EXERCISE IMPERATIVE IN REDUCING SURPLUS FLESH

While exercise is one of the essentials in health building, it is absolutely imperative in reducing our surplus flesh. It is possible for us to reduce our surplus flesh by drugs, if we are willing to pay the price in the grave dangers to health and life. It is possible for us to reduce our surplus flesh by starvation, but in either case, our face and form is left flabby and unshapely. Our strength and vitality is wasted and ofttimes our general health is seriously impaired.

When we have reduced our surplus flesh by Nature's own method—breathing, bathing, diet, and exercise—we find no ill effects. The whole system has been toned up, the poisons have been eliminated, the blood has been purified, the circulation stimulated, and the cell life nourished and invigorated. The reduction of our surplus flesh has been a complete course in health culture. The exercise has eliminated a portion of the surplus flesh by consuming it, and burning it up in the cell life by oxidation, while the remainder has been converted into healthful flesh and muscle. The result is there is no flabby flesh, and there is no disfiguring wrinkles. Exercise is imperative in reducing our surplus flesh, when preservation of health, symmetry of form and beauty of appearance is desired.

### CAUTIONS

In presenting a large number of exercises it is not expected that they shall all be taken at one time. Moderation is essential in exercise until we become accustomed to it. If troubled with heart disease we should be very moderate in the beginning. Select your exercises according to your needs. Study descriptions under each cut thoroughly.

## GENERAL EXERCISES FOR REDUCING SURPLUS FLESH

Follow carefully the "Breathing Exercises for the Reduction of Flesh." Read carefully the article on "Hygienic Bathing." Practice all baths. Following instructions on "Preparation for Morning Bath." Take the exercise.

### GENERAL EXERCISES RECOMMENDED FOR REDUCTION OF SURPLUS FLESH

Exercise No. 6. Developing chest expansion and lung capacity.

Exercise No. 6a. Increasing vital lung capacity.

Exercise No. 9 and 10. Relieving gas pressure by breathing. Very important.

Exercise No. 15. Massaging all the vital organs thoroughly.

Exercise No. 24. Heavy massage of the liver, kidneys, stomach, intestines.

Exercises Nos. 21 and 22. The liver twister, or squeezing the impure blood out.

Exercise No. 20. Stimulating kidneys, massaging muscles of the back.

Exercise No. 18. Touching hands to the floor, legs straight and rigid.

Exercise No. 23. Floor work for stomach, liver and kidneys.

Exercise No. 26. Strengthening abdominal walls and local organs.

Exercises Nos. 24 and 25. Heavy massage of liver, kidneys and stomach.

Exercise No. 27. Strengthening abdominal muscles, also muscles of legs.

Exercise No. 28. Local troubles, gall stones, flushing the viscera.

Exercise No. 29. Removing blood pressure and relieving vital organs.

Exercise No. 30. Massaging kidneys, liver, and local organs, reducing hips.

Exercise No. 36. Correcting curvature and round shoulders.

Exercise No. 38. Stretching the diaphragm, massaging vital organs.

Exercise No. 40. Relief for constipation, indigestion, and nervousness.

Exercise No. 41. Developing abdominal muscles by tensing and percussion.

Exercise No. 43. Developing chest and abdominal muscles.

Exercise No. 44. Strengthening abdominal muscles to support the abdomen.

Make your selections from the above exercise according to your needs.

# DIET AND HEALTH

The problem of food is one of the gigantic problems of the race. It is one of the great problems of the nation, the state, the family, and the individual. The great problem of the masses is the problem of their daily bread. It is one of the great problems of interstate commerce, and of international law. Great corporations holding the highways of land and sea are battling for commercial supremacy in handling the food products of the world. Think of the vast problem of distributing the cereals alone over the surface of the whole earth. Think of the toiling millions who literally spend their lives in the battle for bread. Man can sing with ecstasy and delight:

> *"My Father is rich in houses and lands,*
> *He holdeth the wealth of the world in his hands:*
> *Of rubies and diamonds, of silver and gold*
> *His coffers are full—He has riches untold."*
>
> *"A tent or a cottage, why should I care?*
> *They are building a cottage for me over there:*
> *Though exiled from home, yet, still I may sing:*
> *All glory to God, I'm the child of a King."*

But just as long as he remains this side the "pearly gates" he must fight the battle for bread. The problem of food and the problem of health are vitally related. More than this, the food problem and the brain problem of the nation are vitally related. The brain power of the toiler, the student, the scholar, the scientist, and the statesman depends upon his food supply. The digestion, the assimilation, the nutrition of the body all depend upon the food supply.

### THE PROBLEM OF DIET

The problem of diet is the problem of the selection and the combination of our food supply. This involves the problem of the quality, the quantity, and the preparation of our food supply. These are vital.

The value of our food supply is limited very largely by our care of the body along the lines of breathing, bathing and exercising. This determines our ability to gain the highest amount of nutrition from the food taken into the body. What would otherwise be most wholesome food may become a serious poison to the body, because of the neglect to care for it along the lines of bathing, breathing and exercise. An abnormal amount of food may also transform wholesome food into rank poison. Wrong combinations of food often transform wholesome foods into poisons. Improper selection of food may leave the body wholly unnourished.

### BODY BUILDING AND REPAIR

Protein is the only substance out of which the body can repair or build the cell life of tissue, nerve, muscle, bone, or brain. Protein is found only in eggs, meat, peas, beans, cheese, and fish. There must be absolutely some of this food for a well balanced ration, or you body is wasting away. The body is automatic in its repair and rebuilding, but it must be furnished the proper building material. It cannot ''Make brick without straw.''

### GENERATING HEAT AND ENERGY

The body is a furnace generating its own heat and energy. It must be provided with an adequate supply of fuel out of which to generate this heat and energy. The foods out of which the body generates its ordinary heat and energy, for performing the bodily functions, and for carrying on the work of the body, are the carbohydrates. We find these in the cereals, the fruits, and the vegetables. We must have a normal supply of these foods in our diet, or the body will become weak and lanquid. When we need only the ordinary amount of heat and energy these foods furnish a sufficient fuel supply for the needs of the body. When we are engaged in heavy labor and demand a large amount of heat and energy, we must have some of the heavier fuel corresponding to the coal. We furnish this heavier fuel for the body in fat, butter, oils, cream. These are very rich in their production of heat and energy. We cannot use too large a supply of this class of food because it is hard for the digestive organs to handle, unless there is an abundant demand from the muscles, through heavy work. The sedentary individual and those at light work must avoid these heavy fuels, or they will poison the system with a surplus amount of food which the digestive organs cannot eliminate. Diet deals with the proper selection of our foods.

### DIET AND THE BLOOD

''The blood is the life.'' The selection of our food supply determines the condition of the blood. The richness of the color in the flower depends on the nature of the soil on which it feeds. The purity or poverty of the blood depends on the food and the oxygen on which it must feed. Where there is pure blood there can be no disease. Health and diet are very vitally related. Good health is impossible without pure blood. Pure blood is impossible without a well balanced ration. The blood stream of a thousand miles must be fed first with a generous supply of pure oxygen. Secondly, it must be fed with only a normal supply of food, so that it shall not be poisoned by the gases from decomposing food in the stomach and intestines. Thirdly, it must be fed by a generous supply of the mineral salts, which will furnish the iron and other chemical ingredients necessary to purify and vitalize the blood. These mineral salts will be obtained from the celery, lettuce, onions, raw cabbage, raw tomatoes, raw spinach, radishes, parsley and raw fruits. Pure blood means the proper feeding of the cell life by both a liberal supply of oxygen and a well balanced ration. This means a healthful condition of the red blood corpuscles that carry the oxygen to the cell life, and eliminate the poisonous carbonic acid gas through the lungs. It means also the healthful condition of the white blood corpuscles, those marine warriors that defend the body against foreign invasion. A perfect diet produces pure rich blood. This means health.

### COMBINATIONS OF FOOD

We now approach a delicate point in diet. The combination of food is a very serious problem. Proper combinations of food mean health. Improper combination of foods means ill-health. Some combinations of food produce rank poison. Fish and ice cream produce a serious poison to some systems. Spinach and ice cream are also poisonous to some individuals. Salads and ice cream are very unwholesome. Raw fruits and raw vegetables always clash, and produce a gaseous condition of the stomach and intestines. Milk and vegetables, milk and meat, and milk and sour fruits form very bad food combinations. Many persons find nuts and vegetables do not agree with them at the same meal. Grains with sweet fruits and milk may produce gas on the stomach and intestines.

The cereal foods from grains form a good combination with fruits, eggs, nuts, vegetables, or milk. These are wholesome for most persons. You will find a classified list of poisonous foods in this book. These foods are not poisonous to all persons, but they are to many individuals.

### MEDICINAL FOODS AND HEALTH

Under the study of medicinal foods you will find a classification of foods that should be used in special diseases. Consult this table. You will find it especially helpful. It is just as easy to select medicinal foods for the various diseases as it is to select drugs.

You will find also in the chapter on "Medicinal Foods," an outline of the foods that increase the flow of saliva and gastric juices, foods that are constipating, foods that are laxative, blood building foods, catarrhal foods, dyspepsia foods, diabetic foods, fattening foods, fat-reducing foods, foods for rheumatism. You will find here not only the foods to use in these diseases, but also the foods that must be avoided. When we come to make our food storehouse our medicine chest, we will come to understand more of the real value of our food supply. This does not mean the elimination of either medicine or the physician, it simply means the elimination of the poisons that make necessary the call of the physician when the only trouble is improper selection of the food supply. Call your physician when you need him, but do not fill your system with foods that virtually become poison to you under the circumstances for the sake of calling him.

## DIET FOR THE REDUCTION OF SURPLUS FAT

*"Against diseases here the strongest fence*
*Is the defensive virtue, abstinence."*
—Herrick.

*"Every man desires to live long, but no man would be old."*—Swift.

In presenting the diet for the reduction of surplus fat we assume that you have already adopted the basic principles for the treatment of obesity. We must reduce our flesh on a scientific basis so that we may not only reduce the surplus fat, but that we may restore the body to an absolutely healthful condition. The principles of the New Health Conscience for the reduction of surplus flesh mean a complete health education. We would undertake this work on no other basis. So in presenting you this system of diet we assume that you are practicing the basic principles of breathing, bathing, and exercising, as presented in this book. These are for the restoration and preservation of your general health. They are the same we would give you were you not forced to fight the problem of the accumulation of surplus fat.

When you must fight the problem of surplus flesh, then we recommend an additional amount of breathing exercises so that the oxygen may consume the surplus fat, and you increase your heavy exercises so that you may burn up some of the purplus fat and transform it into muscle. This leaves the body in a healthful condition.

### REDUCING THE FOOD SUPPLY

*"Our portion is not large indeed,*
*But then how little do we need:*
*For Nature's calls are few:*
*In this the art of living lies,*
*To want no more than may suffice,*
*And make that little do."*

—COTTON.

We reduce the food supply for two reasons. First, we must avoid the poisoning of the whole system by an abnormal food supply. Secondly, we must feed the body only the necessary amount of food to produce heat and energy necessary for the bodily functions, and to meet our demands in expended energy. This reduction is essential to health as well as for the elimination of surplus fat. It is this surplus food that builds the accumulated rolls of fat on the body. It is this surplus food that imprisons the heart in its prison cell of fat, and often forces it to cease its labors. It is this surplus food that is poisoning your whole system, shattering your nerves, destroying your digestion, filling your body with rheumatic aches and pains, destroying your brain cells and robbing you of your power of concentration of thought, and your power to successfully operate your business. We are glad to say "good-bye" to such a foe and deadly enemy. The only wonder is that we did not sooner discover his identity. He concealed his identity under the guise of a friend. Henceforth that dreadful monster, "Appetite," is a prisoner in chains, until we can destroy his power, which will not be long.

### DIET NOT STARVATION

Diet for the reduction of surplus flesh does not mean starvation. We recommend sufficient food to thoroughly nourish your body, and to provide sufficient energy for your daily task. It is only the surplus eliminated. The food that will be given you will be much more nutritious than that which you have been using. It will provide strength and energy, rather than pile up mountains of surplus fat. I often wonder how I bore up as long as I did under my burden of more than 75 pounds of surplus fat. I do not wonder now that I became a physical and nervous wreck. The marvel to me is that I was so completely restored to health. My friends wonder now how I can do from fourteen to sixteen hours of strenuous work daily. I do it by using the food I recommend to you—food that builds nerve, muscle, blood and brain, that creates strength and energy, rather than build superflous fat and blubber. Reduction of flesh has its cost in effort and self-denial. It is worth the price, yea, more than a hundred fold. The joy of health and strength and vigor of body and brain and nerve is more than a hundred fold compensation.

### THE BIBLICAL CURSE ON BREAKFAST EATERS

*"Woe to thee, O land, when thy king is a child, and thy princes eat in the morning:"*

*"Blessed art thou, O land, when thy king is the son of nobles, and thy princes eat in due season, for strength, and not for drunkenness."*—SOLOMON, *Ecclesiastes* 10:16-17.

### THE NO-BREAKFAST PLAN

No person can eat breakfast and be healthy. The stomach absolutely must have rest. It is a false appetite that demands food in the morning. A base and depraved appetite akin to that of the drunkard as he demands his morning drink. A false and depraved appetite demands a stimulant. I speak again from "inside information." My morning meal was a regular dinner. It contained sufficient food for a whole day's ration: Corn bread, hot cakes, or hot biscuits, plenty for three men; mush and milk; baked potatoes; beefsteak—more meat for my morning meal than I eat now in a week. Ofttimes two or three kinds of vegetables. Hot cakes to begin with and to close the meal, and two or three scattered through it. Hot cakes swimming in butter and syrup. This was my beginning of the day's ration. I am well aware of the fact that "there are others." My deliverance from the bondage of the flesh and appetite is simply marvelous. I count the "no breakfast plan" my best friend in eliminating the surplus food from my diet. It has helped me to gain control of my appetite; to keep my body under. It has helped me to deny myself the foods that were my greatest enemies as flesh builders and fat producers. Your battle will be over by the third day when you have formed a definite resolution, ironclad, "I will not eat breakfast." The beauty of it for the whole family. It is better than a vacation for mother. No more hurry and confusion to have breakfast on time. No two hours' work to get breakfast and clean up. Rise, take your breathing, exercising, and bathing, and you are ready for your daily task. Don't even think about breakfast. If you are a little faint the first few days, at ten o'clock, squeeze half a lemon in a glass of water, drink one-third of it, then sip the remainder occasionally. You will come to your noon meal with a genuine hunger. Chew your food to a liquid. This will give you about the same time for your noon meal, and by chewing the food to a liquid you will consume but half the usual amount of food and will be fully satisfied. Do not over-eat at the noon meal.

## SUGGESTIVE MENUS

In presenting these suggestive menus we do not claim for each menu an exact scientific proporton of protein, fats and carbohydrate, but they are sufficiently accurate to furnish a well balanced ration, and will provide the nutrition necessary for the heat and energy of the whole body for all ordinary active service. In the beginning of your flesh reduction you may find it necessary to materially reduce the amount of food given in these menus. This may easily be done by omitting a portion of each article of food. The general menus for flesh reduction are sufficient for most fleshy people after they have sufficiently reduced their flesh. You will find fuller instruction at the close of the table of menus.

### SUGGESTIVE MENUS FOR REDUCING SURPLUS FLESH

| **Menu No. 1** | Service | Ounces | Calories Protein | Cal. Fat | Carbohydrate | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Tomato soup | ½ Cup | 4 | 12 | 8 | 40 | 60 | 2.0 |
| Celery | 2 Stalks | 2 | 2 | 0 | 8 | 10 | 3.5 |
| Hygienic toast | 2 Slices | 2 | 24 | 28 | 188 | 240 | 2.5 |
| Butter | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Baked beans | 3 T. S. | 3 | 28 | 10 | 75 | 113 | 3.7 |
| Tomatoes, stewed | 3 T. S. | 3 | 5 | 1 | 15 | 21 | 2.0 |
| Pineapple, canned | 2 Slices | 4 | 2 | 1 | 102 | 105 | 2.0 |
| Totals | | | 74 | 123 | 428 | 625 | |
| **Menu No. 2—Dinner, 6 p. m.** | | | | | | | |
| Cabbage-lettuce sal | 2 T. S. | 2 | 8 | 12 | 11 | 31 | 2.5 |
| Hygienic toast | 2 Slices | 2 | 24 | 28 | 188 | 240 | 2.5 |
| Butter | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Roast lamb | 2 Slices | 2 | 100 | 68 | 00 | 168 | 3.0 |
| Rice, steamed | 2 T. S. | 2 | 8 | 00 | 60 | 68 | 1.5 |
| Turnips, cooked | 3 T. S. | 3 | 2 | 8 | 8 | 18 | 4.5 |
| Cranberries | 3 T. S. | 3 | 1 | 2 | 38 | 41 | 3.0 |
| Sugar | ½ T. S. | ¼ | 0 | 0 | 25 | 25 | 1.5 |
| Totals | | | 144 | 193 | 330 | 667 | |
| **Menu No. 3—Luncheon, 12 Noon** | | | | | | | |
| Tomato, raw, lemon | 1 Medium | 4 | 5 | 2 | 21 | 28 | 2.0 |
| Gluten bread | 2 Slices | 5 | 35 | 6 | 178 | 219 | 3.5 |
| Butter | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Eggs, scrambled | 2 Eggs | 4 | 100 | 92 | 00 | 192 | 2.5 |
| String beans | 3 T. S. | 3 | 4 | 5 | 9 | 18 | 2.5 |
| Olives, ripe | 5 Olives | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Rhubarb sauce | 3 T. S. | 2 | 2 | 3 | 15 | 20 | 2.7 |
| Totals | | | 151 | 232 | 231 | 614 | |

| Menu No. 4—Dinner, 6 p. m. | Service | Ounces | Calories Protein | Cal. Fat | Carbohydrate | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Celery-lettuce salad.. | 2 T. S. | 2 | 12 | 7 | 11 | 30 | 2.5 |
| Hygienic toast........... | 2 Slices | 2 | 24 | 28 | 188 | 240 | 2.5 |
| Lima beans, fresh...... | 3 T. S. | 3 | 15 | 1 | 54 | 70 | 2.7 |
| Butter ........................ | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Cottage cheese........... | 3 T. S. | 3 | 76 | 4 | 16 | 96 | 3.0 |
| Tomatoes, stewed...... | 3 T. S. | 3 | 5 | 1 | 15 | 21 | 2.0 |
| Plums, cooked tart.... | 3 T. S. | 3 | 10 | 0 | 100 | 110 | 2.0 |
| Totals ........................ | | | 123 | 116 | 384 | 623 | |
| **Menu No. 5—Luncheon, 12 Noon** | | | | | | | |
| Apple ........................ | 1 Apple med. | 6 | 3 | 4 | 100 | 107 | 3.5 |
| Green peas................. | 3 T. S. | 3 | 12 | 6 | 30 | 48 | 3.5 |
| Rice-egg omelette...... | 3 T. S. | 3 | 24 | 20 | 52 | 96 | 2.5 |
| Gluten bread............... | 2 Slices | 3 | 35 | 6 | 178 | 219 | 3.5 |
| Butter ........................ | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Onions, cooked........... | 3 T. S. | 3 | 3 | 4 | 11 | 18 | 2.5 |
| Peanuts, shelled.......... | 1 T. .S. | 1 | 46 | 70 | 44 | 160 | 3.5 |
| Peaches, cooked.......... | 3 T. S. | 3 | 2 | 00 | 60 | 62 | 3.0 |
| Totals ........................ | | | 126 | 185 | 475 | 786 | |
| **Menu No. 6—Dinner, 6 p. m.** | | | | | | | |
| Baked apple................ | 1 Medium | 4 | 2 | 2 | 116 | 120 | 1.7 |
| Orange-banana salad | 2 T. S. | 3 | 4 | 0 | 64 | 68 | 2.5 |
| Hygienic toast........... | 2 Slices | 2 | 24 | 28 | 188 | 240 | 2.0 |
| Butter ........................ | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Eggs ........................... | 1 Boiled med. | 2 | 48 | 45 | 3 | 96 | 3.0 |
| Corn, green................. | 3 T. S. | 3 | 12 | 3 | 75 | 90 | 3.7 |
| Rice-custard ............. | 2 T. S. | 2 | 7 | 9 | 31 | 77 | 3.0 |
| Totals ........................ | | | 98 | 162 | 507 | 767 | |
| **Menu No. 7—Luncheon, 12 Noon (Special)** | | | | | | | |
| Celery ........................ | 2 Stalks | 2 | 2 | 0 | 8 | 10 | 3.5 |
| Radishes, round.......... | 3 Small | 1 | 2 | 3 | 8 | 13 | 3.5 |
| Gluten bread.............. | 2 Slices | 3 | 35 | 6 | 178 | 219 | 3.5 |
| Butter ........................ | ½ Cub. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Roast leg of lamb...... | 2 Slices | 3 | 100 | 68 | 00 | 168 | 3.0 |
| Cranberries ............... | 2 T. S. | 2 | 1 | 1 | 26 | 28 | 3.0 |
| Lima ........................... | 3 T. S. | 3 | 15 | 1 | 54 | 70 | 2.7 |
| Pineapple, canned...... | 2 Slices | 4 | 2 | 1 | 102 | 105 | 2.0 |
| Totals ........................ | | | 158 | 155 | 376 | 689 | |

**Menu No. 8—Special, Dinner 6 p. m.**

| | Service | Ounces | Calories Protein | Cal. Fat | Carbohydrate | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Oyster soup, fresh | ½ Cup | 4 | 26 | 55 | 26 | 107 | 3.0 |
| Pineapple-orange sal. | 3 T. S. | 3 | 3 | 0 | 51 | 54 | 2.0 |
| Gluten bread | 2 Slices | 3 | 35 | 6 | 173 | 219 | 3.5 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Chicken, roast | 2 Slices | 3 | 132 | 54 | 9 | 186 | 3.3 |
| Green peas | 3 T. S. | 3 | 12 | 6 | 30 | 48 | 3.5 |
| Strawberries | 3 T. S. | 3 | 4 | 2 | 27 | 33 | 2.0 |
| Sugar | ½ T. S. | ¼ | 0 | 0 | 25 | 25 | 1.5 |
| Totals | | | 213 | 198 | 337 | 748 | |

**Menu No. 9—Special Noon Luncheon for Rapid Reduction**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Tomatoes, raw, lemon | 1 Medium | 3 | 4 | 2 | 16 | 22 | 2.0 |
| Hygienic toast | 2 Slices, thin | 2 | 24 | 28 | 188 | 240 | 2.0 |
| Butter | ½ Cu. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Egg | 1 Scrambled | 2 | 50 | 46 | 00 | 96 | 3.0 |
| Rhubarb sauce, tart | 3 T. S. | 3 | 2 | 3 | 15 | 20 | 2.7 |
| Totals | | | 81 | 154 | 219 | 454 | |

**Menu No. 10—Special Dinner 6 p. m. for Rapid Reduction**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Lettuce, lemon juice | 3 T. S. | 2 | 4 | 0 | 8 | 12 | 2.5 |
| Gluten bread | 1 Slice | 1½ | 17 | 3 | 90 | 110 | 3.5 |
| Butter | ½ Cu. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Cottage cheese | 2 T. S. | 2 | 50 | 3 | 12 | 65 | 3.0 |
| Tomatoes, cooked | 3 T. S. | 3 | 5 | 1 | 15 | 21 | 2.0 |
| White fish | 1 Pc. 2x3x½ | 3 | 77 | 20 | 00 | 97 | 3.0 |
| Totals | | | 154 | 102 | 125 | 381 | |

**Menu No. 11—Special Luncheon, Noon, for Rapid Reduction**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Green onions | 3 Small | 3 | 3 | 00 | 39 | 42 | 3.0 |
| Hygienic toast | 2 Slices | 2 | 24 | 28 | 188 | 240 | 2.0 |
| Lima beans, green | 3 T. S. | 3 | 15 | 1 | 54 | 70 | 2.7 |
| Butter | ½ Cu. inch | ⅛ | 1 | 75 | 00 | 76 | 3.0 |
| Egg | 1 Poached | 2 | 50 | 46 | 00 | 96 | 2.5 |
| Plums, tart | 2 T. S. | 2 | 7 | 0 | 67 | 74 | 2.0 |
| Totals | | | 97 | 150 | 348 | 598 | |

### Menu No. 12—Special Dinner, 6 p. m., for Rapid Reduction

| | Service | Ounces | Calories Protein | Cal. Fat | Carbohydrate | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Baked Apple | 1 Medium | 2 | 2 | 2 | 116 | 120 | 1.7 |
| Roast leg lamb | 2 Slices | 2 | 67 | 45 | 9 | 121 | 3.0 |
| Gluten bread | 2 Slices | 2 | 24 | 4 | 118 | 146 | 3.5 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| String beans | 3 T. S. | 3 | 4 | 5 | 9 | 18 | 2.5 |
| Totals | | | 98 | 131 | 252 | 481 | |

### Menu No. 13—Noon Luncheon for Rapid Reduction

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Stuffed tomato | 1 Tomato | 4 | 5 | 2 | 21 | 28 | 3.0 |
| Gluten bread | 1 Slice | 1 | 17 | 3 | 89 | 109 | 3.5 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Green peas | 3 T. S. | 3 | 12 | 6 | 30 | 48 | 3.5 |
| Egg, boiled | 1 Egg | 2 | 48 | 45 | 00 | 94 | 3.0 |
| Plums, tart, cooked | 3 T. S. | 3 | 10 | 00 | 100 | 110 | 3.0 |
| Totals | | | 94 | 57 | 315 | 465 | |

### Menu No. 14—Dinner, 6 p. m., for Rapid Reduction

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cucumbers, lem. juice | 6 Slices | 3 | 2 | 0 | 8 | 10 | 4.0 |
| Hygienic toast | 1 Slice | 1½ | 12 | 14 | 94 | 120 | 2.7 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Broiled chicken | 3 Slices | 3 | 86 | 10 | 00 | 96 | 4.0 |
| Cheese, skimmed milk | ⅗ Cu. inch | 1 | 52 | 29 | 4 | 85 | 3.8 |
| Orange juice | 6 T. S. | 3 | 00 | 00 | 45 | 45 | 1.0 |
| Totals | | | 153 | 128 | 151 | 432 | |

### Menu No. 15—Noon Luncheon for Rapid Reduction

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Grapes | 3 Ounces | 3 | 4 | 5 | 54 | 63 | 2.0 |
| Gluten bread | 1 Slice | 1 | 17 | 3 | 89 | 109 | 3.5 |
| Butter | ½ Cu. inch | ⅓ | 1 | 75 | 00 | 76 | 3.0 |
| Baked sea bass | 1 Pc. 2x3x½ | 3 | 69 | 2 | 00 | 71 | 3.0 |
| Turnips, boiled | 3 T. S. | 3 | 2 | 8 | 8 | 18 | 4.5 |
| Apple sauce, tart | 3 T. S. | 3 | 1 | 1 | 76 | 78 | 2.0 |
| Olives, ripe | 5 Large | 1 | 4 | 49 | 8 | 61 | 3.0 |
| Totals | | | 99 | 143 | 235 | 477 | |

**Menu No. 16—Special Dinner, 6 p. m., for Rapid Reduction**

| | Service | Ounces | Calories Protein | Cal. Fat | Calories Carbo. | Total Cal. | Hours Dig. |
|---|---|---|---|---|---|---|---|
| Orange Banana salad | 3 T. S. | 3 | 4 | 0 | 64 | 68 | 2.5 |
| Hygienic toast.......... | 1 Slice | 1½ | 12 | 14 | 94 | 120 | 2.5 |
| Roast chicken.......... | 2 Slices | 3 | 132 | 48 | 00 | 180 | 3.0 |
| Chicken gravy.......... | 2 T. S. | 2 | 8 | 10 | 22 | 40 | 2.5 |
| Cranberries, tart....... | 2 T. S. | 2 | 1 | 1 | 25 | 27 | 3.0 |
| Tomatoes, cooked..... | 3 T. S. | 3 | 5 | 1 | 15 | 21 | 2.0 |
| Pineapple, canned..... | 1 Slice | 2 | 2 | 0 | 42 | 44 | 2.0 |
| Totals .................................................... | | | 164 | 74 | 262 | 500 | |

## MENU SUGGESTIONS

The above menus for rapid flesh reduction give the highest amount of food that may be used while in the actual process of reduction. Some individuals will have to omit a portion of the above light menus from their diet for a short time to accomplish the desired result. For those who find the reduction is not rapid enough, the following items should be omitted during actual reduction and may be used later without increasing the weight materially: Beans, butter, cheese, olives, peanuts, and meats. Some will find a sufficient reduction in omitting half the amount of the above articles specified. You may omit one slice of gluten bread, or hygienic toast, where two are specified. These menus are sufficiently generous to omit any article of food that you are positive does not agree with you, but not until you have tested them in these menus and under the principles of the New Health Conscience for flesh reduction. When eating the special dinners it is well to omit the bread and butter if you feel the menu a little heavy. In flesh reduction during the actual process do not eat your meal unless hungry. It is better to omit the meal entirely, but do not eat between meals, this is imperative. Chew your food to a liquid, you cannot bolt your food and reduce your flesh.

## UNLIMITED DIET IN FLESH REDUCTION

Beware of the unlimited diet in flesh reduction. Many will say to you, ''Eat anything, and all you want under my system of flesh reduction.'' These methods depend on reducing your surplus flesh by harmful drugs, which ofttimes paralyzes the whole digestive system. Remember, this method is purely a natural, common-sense method. It offers you no injurious drugs. It does not swear you to secrecy. It furnishes you a complete health system and restores your whole body to normal health while you are reducing your surplus flesh. You pay for no expensive drugs. You will not have to double your initial cost in a few weeks by the purchase of a new supply of flesh-reducing medicine. You save far more than the initial cost of the entire system from three to six times per year in the cost of your food supply. You will add a hundred per cent to your efficiency and from ten to twenty-five years to your life. The real joy of living will be to you a daily revelation. The buoyancy and vigor of youth will return. The real genuine comforts and joys of life will be yours again.

## NO DANGER OF STARVATION

There is no danger of starvation on this limited food supply for reduction of surplus flesh. The body will feed on the surplus flesh alone with absolutely no food, for from twenty to twenty-five days, and maintain its strength and comparative vigor, providing there is a sufficient amount of surplus flesh. It will consume from two to two and one-half pounds of the surplus flesh daily for the first eight or ten days, and about one pound daily thereafter. The author speaks with authority on this point, as he tested it out scientifically in his absolute fast of twenty days. I lost twenty pounds the first eight days and twelve pounds the last twelve days. I maintained my strength and vigor, doing all my regular work as a pastor, preaching twice on the second, the ninth and the sixteenth days of the fast. I had no hunger and but little fatigue at the close of the fast. I am confident I could have maintained my strength and continued the fast ten days longer. See the full report in the article on fasting.

### FASTING NOT A PART OF THIS SYSTEM

Fasting is not a part of this system of flesh reduction. I do not recommend it in your case. No person should fast more than from one to three days without consulting a physician who believes in fasting, and has given special study to the subject; or a specialist on the subject of fasting. I mention the above facts to assure the reader that there is no danger of starvation in adopting the light diet recommended for flesh reduction.

### FRUIT DIET

A light fruit diet is a splendid thing for the general health, or for flesh reduction. A wholesome fruit diet for three days would be eight ounces of fruit for the noon luncheon, and eight ounces for the evening meal, varying the kind for each meal, using one variety for each meal. In flesh reduction you should use the tart fruits, and for flesh building you should use the sweet fruits. The fruit diet is a splendid tonic for the whole system. It should be made very light. This affords a rest for the digestive and assimilative organs. Fruit juices are so pure they can enter the blood stream without action of the digestive organs. They are composed of fruit sugar and distilled water. Many of the fruit juices are perfect germicides. Remember, in flesh reduction your battle is not with nutrition of the body. Your great battle is with your appetite, which long ago conquered your whole being and forced you into captivity.

### FORBIDDEN FOODS FOR FAT PEOPLE

The following foods must not be used by fat people as they art fat-producing foods: Butter in light quantities only. Cream, milk, and cheese. All starchy foods and all very sweet foods must be avoided. Potatoes, macaroni, sweet potatoes, oatmeal, cereal mushes of all kinds except gluten mush occasionally. Pie and cake and all pastries while reducing flesh; these may be used sparingly after you have reduced to the desired weight. All rich soups and rich gravies, fats and oils must be avoided. Rich nuts must not be used. Beets are forbidden. All hot breads and biscuits, hot cakes and doughnuts are on the forbidden list for the flesh reducer.

### PERMISSIBLE FOODS IN FLESH REDUCING

*Drinking.* The problem of the liquid supply of the body is very important in reducing our sulplus fat. We must abstain from alcoholic drinks, including beer and wines. They destroy proper digestion and assimilation. Tea, coffee, chocolate and milk are also barriers against the best results. You can reduce your flesh with the latter beverages but your general condition will be much better without them. As we do not drink with our meals, this is a good time to abandon these stimulants.

We recommend no beverage with the meal. We recommend a glass of vichy water at 11 a. m. and 4 p. m. Drink between these periods a glass of lemon water, squeezing half a lemon in two-thirds of a glass of water. The vichy water can be made by securing the vichy tablets at any drug store and using two tablets to the glass of water. The lemon water must be used without sugar or all medicinal properties are destroyed. The lemon water may be taken half an hour after meals.

### FOODS FOR SELECTION

*Mineral Salts.* Celery onions, lettuce, raw cabbage, raw tomatoes, parsley.

*Fruit.* Tart apples, peaches, pears, grapes, strawberries, rhubarb, cherries, berries, grapefruit, plums, loquats, pineapple, and nectarines, and apricots. This fruit must be eaten in very moderate quantities. It must be eaten with your meals and without sugar, except strawberries may have a very little. No short cake. You must eat but one variety of fruit at the same meal. The juices of tart fruit are very wholesome, but must be taken without sugar. Use no raw vegetables when using raw fruit.

*Vegetables.* Turnips, squash, string beans, green peas, onions, tomatoes, beans, cucumbers, spinach, asparagus, sauerkraut. Select one cooked vegetable for each meal. Two tablespoonfuls of any vegetable is sufficient.

*Cereals.* The cereals belong mostly with the "Forbidden fruits" in the reduction of surplus fat. We must omit all mushes, except occasionally the gluten mush. We must omit all pastries, pie, cake, and bread, especially hot bread, and hot cakes and hot biscuits. We may eat the gluten bread, gluten biscuits, hygienic graham toast, hygienic rye toast. All the soft foods are fattening and must be omitted while reducing.

*Protein.* Some recommend almost wholly a protein diet for the reduction of surplus fat. I prefer not to do this on account of the excessive burden thrown on the liver and kidneys in the elimination of the protein products. A liberal amount of protein during the month or two of special reduction may be allowed. If you increase the amount of the protein foods, you must diminish the others proportionately. The following protein food may be used: Lean meats, chicken, turkey, fish, excepting salmon, albacore, bluefish, mackerel, halibut and sardines. Roast leg of lamb and roast leg of mutton are among our most wholesome meats for flesh reduction. Pork is absolutely forbidden. Lima beans, white beans and pink beans furnish protein and are not rich in fat. Cheese must be omitted. Chestnuts may be used, but most nuts are too rich in fats. Cottage cheese may be used. Eggs are wholesome in flesh reduction and are a good substitute for lean meat. We have given you a very wide selection of foods that may be used in reduction of surplus fat. You must select a very light diet from these foods. In most cases you can carry your low food standard below what I have indicated in the menus. Do this where you find you can and still have sufficient nourishment.

### DANGERS OF SUPERFLUOUS FAT

Dr. W. Epstein, one of the most noted experts in the treatment of the diseases of the obese, declares that in handling 394 cases of intercurrent diseases—pneumonia, typhoid, bronchitis, etc.—where the patients were fifteen pounds or more over normal weight, the death rate was more than 150 per cent higher than in ordinary cases.

I wish to repeat here the declaration of Dr. Gilfoy, chief of the health department of New York City, in which he declares that the death rate from heart disease and kidney trouble has increased more than 100 per cent in the last thirty years in the face of all the advances of medical science. He also declares that this increase is due to the over-eating of the American people. This abnormal food supply builds our surplus fat. Dr. Sadler of Chicago declares that Bright's disease and diabetes has increased 500 per cent in the last fifty years. One medical authority claims that diabetes has increased 1500 per cent in the last fifty years. These diseases are the product of an abnormal food supply, which builds our surplus fat. Is it not time we should hoist the danger signal against obesity?

### PROMINENT AUTHORITY ON OBESITY

Dr. Carl Von Noorden, one of the world's most eminent authorities on the disorders of metabolism (the absorption, assimilation, oxidation and elimination of our food supply), who is senior physician of the city hospital of Frankfort, A. M., Germany, read a paper in my home city of Los Angeles, before the American Medical Association, in June, 1910, in which he made the following assertions:

"It is due to the disorders of metabolism that degenerative changes cut short the active ties of so many men and women in middle life—that in these latter days senility and death itself come prematurely to a very large portion of mankind. Such disorders constitutes the bane of modern civilization. They have been in some measure also a reproach to the science and art of medicine, since until very recently physicians have insisted on treating obese patients according to old established routine practice, by dosing them with gallons of medicines.

"I wish to place myself on record as opposing the view, that we hear so frequently expressed, that reduction cures are a weakening procedure and constitute, in other words, a so-called weakening cure. The ideas prevalent in the minds of the people in regard to this matter are altogether exaggerated. I feel justified in stating positively that reduction cures based on a proper diet and proper exercise and carried out expeditiously is by no means a weakening procedure. A reduction cure can always be tolerated without detriment to the patient, and as a rule improves the general functional powers of the organism. Unfortunately many are taking harmful nostrums, and are the victims of a certain definite method of dietetic treatment that does not vary one bit in a thousand dis-similar cases. Reduction cures are therefore a happy hunting ground for the charlatan and the fakir and all the exploiters of the method swindle.

"Of the different methods of reduction treatment that can be adopted, slow methods are unquestionably to be preferred, particularly with women with large fat deposits in the abdomen, and in young subjects."

This coming from such an eminent authority as Dr. Von Noorden shows the wisdom of the purely "Nature Method" for reduction of surplus flesh. It also shows that the reduction of surplus fat by the principles of breathing, bathing, exercising and dieting is the safest method.

The principles of the New Health Conscience as applied to the reduction of surplus fat, by the abandonment of the abnormal food supply and the proper selection and combination of foods furnish a safe method for reduction and health.

While you are reducing your surplus fat, you are at the same time laying broad foundations for perfect health. You are feeding the cell life with an abundance of oxygen, and with a normal amount of well selected food. You are developing a sufficient vital lung capacity to insure pure rich blood throughout the thousand miles of the blood stream. You have been flushing the arteries and capillaries and veins so that you may have a pure vital circulation of the blood throughout the entire length of this blood stream. Your breathing has developed all the millions of air sacs in the lungs, and your bathing has opened up all the millions of pores in the skin, so that there may be perfect elimination of carbonic acid gas from the lungs, and perfect elimination of all poisons from the pores of the skin. Your abandonment of the abnormal food supply has placed the stomach, the intestines, the liver, the kidneys, the heart and the lungs in a normal healthful condition. They can eliminate the poisons and perform their natural functions. Through this method you reduce your weight and come into your normal health at the same time. You have no poisonous drugs to destroy your vital organs, or impair your digestion and assimilation.

PROPER WEIGHT ACCORDING TO HEIGHT

| Height | | Weight | Height | | Weight |
|---|---|---|---|---|---|
| Feet | Inches | Pounds | Feet | Inches | Pounds |
| 5 | | 115 | 5 | 8 | 148 |
| 5 | 1 | 120 | 5 | 9 | 155 |
| 5 | 2 | 125 | 5 | 10 | 160 |
| 5 | 3 | 130 | 5 | 11 | 165 |
| 5 | 4 | 135 | 6 | | 170 |
| 5 | 5 | 140 | 6 | 1 | 175 |
| 5 | 6 | 142 | 6 | 2 | 180 |
| 5 | 7 | 145 | 6 | 3 | 190 |

# OUTLINE FOR REDUCING SURPLUS FLESH

The first essential in an outline for the reduction of surplus flesh is an absolute, ironclad resolution and determination to live the system and follow it in every department, and practice it rigidly, making it your business to reduce the surplus flesh which has destroyed your beauty and symmetry of form, robbed you of your sprightliness and virility, marred your pleasure and happiness, imperiled and jeopardized your health, and assaulted your very life, robbing you possibly of from ten to twenty-five years of the best portion of your life's work. You are now to destroy that monster—obesity—which has threatened your own life. Having declared war on this monster, you shall offer him no quarter. Your imperative demands shall be "Unconditional surrender."

## BREATHING EXERCISES

We begin the assault with our morning breathing exercises, which will reinvigorate the whole body, fill every air cell of the lungs, and every cell of the whole body with oxygen, which will purify the blood, destroy the disease germs, and burn up the surplus fat of the cell life by combustion or oxidation in the cell, as the oxygen meets the food in the cell. The following breathing exercises will best accomplish the above object. These exercises should be taken the first thing on rising in the morning. They should be taken in an open screen porch if possible, at least with open windows, so that you may have an abundance of fresh air. Read carefully the description of each of these exercises given with the cuts. These breathing exercises should begin in moderation and increase in vigor until they become strenuous. Always bear in mind that while you are reducing your surplus flesh by your breathing exercises, you are at the same time invigorating your whole body, destroying the disease germs, and purifying the blood. You are also fortifying your throat and lungs against all assaults of those deadly disease germs causing pulmonary diseases, colds, catarrh, la gripe, pneumonia and tuberculosis.

At least ten minutes should be given each morning to the breathing exercises. The more time devoted to breathing exercises, the more rapid will be the reduction. Practice deep breathing as you walk in the fresh air, as you ride in the open street car, as you make your runs and your hill and mountain climbing. Become a hilarious breather. Feed on oxygen.

### NO. 1. SPECIAL BREATHING EXERCISES FOR FLESH REDUCTION

Breathing Exercise No. 5. Expanding Chest Walls.
Breathing Exercise No. 6. Developing Vital Lung Capacity.
Breathing Exercise No. 7. Developing Chest Expansion.
Breathing Exercise No. 6. Increasing Lung Capacity.
Breathing Exercise No. 11. Expanding Chest and Lungs.
Breathing Exercise No. 8. Abdominal Breathing. Strengthening Diaphragm.
Breathing Exercises Nos. 9 and 10. Relieving Gas Pressure by Breathing.
Breathing Exercise No. 13. Developing and Strengthening Chest Walls.

These breathing exercises aid in the elimination of the poisonous carbonic acid gas. It also eliminates the disease which produces the surplus fat. Oxygen starvation is one of the prime causes of obesity. A generous supply of oxygen enables the body to burn up the surplus fat in generating heat and energy for the demands of the body. Remember we receive no nutriment from the food carried to the cell life until that food is burned, or oxidized in the cell, by the oxygen carried from the lungs. Oxygen is Nature's best tonic and blood purifier. Where there is pure blood there can be no disease. An abundance of pure oxygen is the first step in the elimination of surplus flesh.

### NO. 2. MORNING AND EVENING EXERCISES

Scientific activity is life. Stagnation is death. The stagnant pool holds a deadly potion. The sparkling brook is pregnant with life, vigor, buoyancy and animation. The blood stream of a thousand miles demands activity for purity. Nowhere does stagnation mean death more surely than in the blood stream. The blood is the life. The body demands a complete system of exercise for every nerve, every muscle, every organ, and every lung cell and every brain cell. Every cell of the body must be fed both by food and oxygen carried to it by the blood stream. Exercise stimulates the action of the heart to meet the demands of nerve, muscle, and brain. The body demands exercise so that the vital organs may perform their functions, and that the eliminating organs may be preserved healthful, and perform their functions of eliminating the deadly poisons generated by the life processes of the body. I have repeated this from my article on ''Hygienic Exercise'' because it is vital in the reduction of surplus flesh.

### THOROUGHNESS REWARDED

Be very thorough in your exercises. The impaired and diseased condition of the vital organs is largely responsible for the accumulation of the surplus fat. Systematic hygienic exercise will restore them to their normal, healthful condition. Spend fifteen minutes in your exercise in the morning following your breathing exercise. You may increase this to twenty or thirty minutes according to the rapidity with which you wish to reduce your surplus flesh. You will be rewarded a hundred fold in feeling the burden of your flesh rolling away, and the vigor of new life coursing through your arteries and veins. Your sluggishness will give place to vivacity and buoyancy. Your nerves will settle down to perform their regular normal life function, and your intellect will become as keen as a Damascus blade. Life will be crowned with new impulses. Her joys and pleasures will be restored in all their fulness. You will find physical regeneration. Thousands of dollars would not induce you to assume your former condition. You will have a new life expectancy.

### THE EXERCISES

Begin in moderation and increase gradually to strenuousness the following exercises. Moderation must mark the exercises of the aged, and those afflicted with heart disease; but these, above others, will find the exercises absolutely imperative. While we have been able to increase our life line from twenty to more than forty years, there has been practically no increase in our life expectancy after we reach forty years of age. This shows the absolute demand for exercise after this period.

Man's Creator never intended that we should spend thirty-five years in reaching our prime in physical strength, mechanical skill, professional genius, and intellectual power, and find the same blasted and withered in from ten to fifteen years. This is the result of ignorance, wilful neglect and criminal abuse of the body. Man should enjoy his prime in all these departments of service for from twenty-five to fifty years, under the normal conditions of the preserved and unabused body. The individuals burdened with an abnormal amount of surplus flesh, are the greatest sufferers from the blasting and blighting of their lives in its very prime. The following exercises will come as a relief and benediction to the sufferers from surplus flesh, and will aid them in adding from ten to twenty-five years to their life line.

## PRACTICE FAITHFULLY THE FOLLOWING EXERCISES

Exercise No. 6. Developing Chest Expansion.

Exercise No. 6a. Developing Lung Capacity.

Exercise No. 11. Expanding Chest and Lungs.

Exercise No. 15. Massaging the Liver, Kidneys, and Stomach.

Exercise No. 24. Heavy Massage of Liver, Kidney, Stomach and Intestines.

Exercises No. 21 and 22. The Liver Twister and Squeezer.

Exercise No. 20. Stimulating Kidneys and Massaging Muscles of the Back.

Exercises No. 18. Revitalizing the Spinal Column.

Exercise No. 38. Stretching the Diaphragm, Massaging Vital Organs.

Exercise No. 33. Stimulating the Spinal Column and Nerve Centers.

Exercise No. 43. Developing Chest and Strengthening Abdominal Walls.

Exercise No. 44. Strengthening Abdominal Muscles and the Diaphragm.

Exercises Nos. 9 and 10. Relieving Gas Pressure by Breating. Very important.

Exercise No. 13. Developing Chest Walls and Breathing Capacity.

Exercise No. 8. Floor Work. Abdominal Breathing, Strengthening Diaphragm.

Exercise No. 40. Constipation, Nervousness, Indigestion.

Exercise No. 41. Developing Abdominal Muscles by Tensing and Percussion.

Exercise No. 23. Massaging Stomach, Liver and Kidneys.

Exercise No. 24. Heavy Massage for Stomach, Liver and Kidneys.

Exercise No. 26. Strengthening Abdominal Walls and Local Organs.

Exercise No. 25. Massaging Involuntary Nerve Centers, Breaking up Adhesion.

Exercise No. 27. Strengthening Abdominal Muscles, Diaphragm, Legs and Arms.

Exercise No. 28. Local Troubles, Gall Stones, Flushing the Viscera.

Exercise No. 29. Relieving Blood Pressure of Viscera and Vital Organs.

Exercise No. 30. Massage for Kidneys, Liver and Local Organs, Reducing Hips.

Exercise No. 32. Correcting Curvature and Round Shoulders.

Study carefully the description of these exercises given with the cuts, selecting the ones you believe you most need. You will soon become familiar with the exercises. Begin with numbers 7, 8, 15, 17, 19, 21, 38, 42, 44, 12, 11, 41, 23, 25, 28, 27, 12. Become familiar with these and add one more with each exercise after these have become familiar. If you prefer you can practice the first six to begin with and add two with each practice. As you become familiar with the exercises ten of them will be sufficient for the morning or evening exercise. These exercises will consume the surplus fat and generate muscle and healthful tissue. Begin them in moderation, being careful not to strain the body.

### BATHING

Our exercises must be followed by our morning baths, the air bath, the sun bath, the friction bath, the hot and cold water bath, and the sweat bath. The friction bath will precede your exercise, the air bath, and the sun bath will come with your exercises, for they should be taken in the nude or with only a light gown on, and the sweat bath should be produced by your exercise. If you can endure the cold bath it should follow your exercises immediately. If unaccustomed to the cold bath, use the wet cold towel bath for a few mornings to temper the body to the cold, or use a little hot water to break the chill. The cold bath is the best tonic in flesh reduction. The hot bath is the cleansing bath. Some prefer the hot bath following their exercise; if you use the hot bath always finish with the cold bath to close the pores of the skin; this will prevent cold. The morning cold bath is the body's best protection against colds, catarrh, la grippe and pneumonia. Hygienic breathing, the low ration, and the morning cold bath will soon render you immune from all pulmonary diseases. Read and study carefully the articles on bathing. Continue your morning cold bath after you have lost your surplus flesh. It is nature's best tonic. From three to five minutes is long enough for the cold bath. You should have a sweat bath at least once per week from strenuous work, vigorous exercise, or rapid walking or running. The sweat bath opens all the pores of the skin for the elimination of accumulated poisons. Follow the sweat bath with the hot and cold water bath.

### DIET IN FLESH REDUCTION

Diet is an absolute essential for the reduction of surplus flesh. Read carefully the article on Diet, under Obesity. Read also the article on Fattening Foods and the one on Fat Reducing Foods. Study carefully the menus for reducing surplus flesh, as well as the nine sections under Fat Reducing Foods. Follow carefully the menus given. Omit all food rich in sugar, starch or fat. Omit all hot bread, pastries, pies, cakes, jams and jellies. Adopt the "No Breakfast Plan." Chew your food to a liquid. Read carefully the article on "Medicinal Foods." Some foods are listed under both fattening foods and fat reducing foods. They may be used sparingly for either purpose. They serve as a tonic for the digestive organs, and purify the blood, and tone up the whole system. One of the absolute essentials in flesh reduction is to dethrone appetite. Appetite for food will wreck nerve, body and brain, just as surely as appetite for strong drink. Do not drink at meal time. In the morning drink water with lemon juice, no sugar. Sugar destroys the medicinal properties of the lemon.

### GENERAL OUTLINES FOR FLESH BUILDING

*No. 1. Breathing.* Practice the general breathing exercises as per direction given under each cut. Read carefully the whole subject of breathing as outlined in index. Feed the body with sufficient oxygen to purify the blood. Read the articles on the blood, as per index.

*No. 2. Exercise.* Follow the general exercises, practicing about 10 to 15 minutes morning and evening. If you have special troubles of dyspepsia, indigestion, constipation, liver trouble, or kidney disease, specialize on these exercises recommended for relief of such troubles. Observe carefully exercises 1 to 4 and 15 to 40. It is imperative that the digestive organs, the liver and the kidneys, shall be preserved in prime condition for flesh building. Read the articles on "Selection of Foods," and "Combinations of Food," also those on "Digestion," "Indigestion," "Assimilation" and "Nutrition," as found in the index. Read also the articles on the "Lungs," "The Skin," "The Liver," "The Kidneys," "Elimination" and "Mastication," as referred to in the index. Practice thoroughly the suggestions given under these heads.

*No. 3. Bathing.* Following carefully the whole instruction given on bathing. Do not fail to use the morning hot and cold bath. Even delicate and aged persons can use the cold towel bath, even though they think they can not use the cold tub bath. Bathing is a prime essential in flesh building. Use the whole system of baths as outlined under "Bathing."

*No. 4. Diet.* Diet is imperative in flesh building. There must be a scientific selection and combination of foods or health and flesh building are impossible. You must have a comprehensive view of the whole field of "Food Values."

Read the articles on "Food," "Food Values in Nutrition," "Medicinal Foods," "Poisonous Foods," "Fattening Foods." Make your selection of foods from the list of "Fattening Foods" under "Medicinal Foods." Study carefully the articles on "Mastication," "Digestion," "Indigestion," "Assimilation," "Nutrition." Read the articles on "The Esthetic,' also the articles on the influence of fear, anger, worry, jealousy and hatred; over digestion. Cultivate a cheerful, sunny disposition. Be an optimist and banish all pessimism from your mind. Become a student of Nature. Walk and run in "God's great out-of-doors." Admire and love the flowers, the trees, the running brooks, the green fields, the ocean waves. Be in harmony with God and man, and at peace with yourself. Cultivate the habit of seeing the good in your fellow men. Remember always that the bee may extract the honey, and the spider the deadly poison, from the same flower. In this life you will find largely what you are looking for. The bird finds the luscious fruit; the buzzard finds the polluted carrion. Don't wreck nerve, and body, and brain, and home, and happiness by being a pessimist, a spider, or a buzzard. These belong to the wrecking crew of health, happiness, and home. The power of the mind over the body is simply marvelous.

Eat a normal amount of food. Do not over-work the digestive organs. Use a generous supply of sweet or unsalted butter. Milk and cream are also flesh builders. Fats and oils in quantities that the digestive organs can hadle them are also flesh builders. Use the starches and the sweet fruits and nuts, especially walnuts and pecan nuts. Corn bread is also a flesh builder. Oat meal mush and the cereals and fruits are flesh builders. Sweet fruits with sugar and cream are flesh builders.

Select your foods from the flesh building foods, give the body normal care in all departments as outlined and you will add to your flesh until you reach your family tree. You will add from ten to twenty pounds of flesh.

# FASTING

This article on fasting is not simply a theory, but gives the personal experience of the author during an absolute fast covering a period of twenty days, in which time he performed his regular work as pastor of a church, preaching six sermons on the three successive Sundays of the fast, and conducted all other services of his church, working about twelve hours per day, maintaining his usual strength and vigor.

The human body is the most perfect automatic-repair machine known to man. It is also the most abused piece of mechanism on the planet. So delicate is the poise, so perfect the adjustment, and so marvelous the provisions for the preservation of the human body that it is said to have had in its earliest history an endurance of a thousand years. With all the degeneracy and dissipation of the past centuries, with all the crimes of ignorance, neglect, gluttony, and wilful abuse heaped upon it, the body now often performs its functions for one hundred, or one hundred and twenty-five years.

## FUNCTIONS OF THE BODY

The great functions of the body are generating heat and energy, repairing the waste and broken down cells, creating 30,000,000 new cells per minute to recruit the ranks of those fallen in service, maintaining the heart energy which provides for the circulation of the blood and purifying the same through its contact with the 725,000,000 air sacs of the lungs, receiving through these air sacs the necessary oxygen, and discharging through them the poisonous carbonic acid gas, generated in the cell life through oxidation. In addition to these services the body must digest and assimilate the necessary food supply, and provide for the destruction of the disease germs throughout the thousand miles of the blood stream, as they multiply there literally by the millions. In addition to all these functions the body must provide for the elimination of all the poisons generated in the digestive tract. This is accomplished through the liver, which is the greatest manufacturing plant in the world for its size, weighing only about two and one-half pounds, yet manufacturing more than nine hundred pounds of bile annually. The kidneys also perform their part in the elimination of these deadly poisons generated in the digestive tract. Their work is but little less marvelous than that of the liver. While their weight is but five ounces, they have fifteen miles of capillary sewage for the elimination of these deadly poisons.

### ABUSE RENDERS FASTING NECESSARY

So marvelous are the provisions for the preservation of the body that were its normal laws observed, it would be preserved in normal health; for health, not disease, is the normal condition of the body. It is ignorance, neglect, and criminal abuse that renders necessary strenuous measures to preserve the health of the body to the so-called allotted time of ''three score and ten years.' Fasting is a genuine part of the auto-repair system of the human body, and is rendered necessary by man's ignorance, gluttony, and criminal abuse of the digestive organs. The special benefits derived from fasting are the absolute rest afforded the digestive organs, which are at times so over-worked that the whole nervous system is wrecked and poisoned by the decaying of the surplus food in the intestines. This decomposition generates a poisonous gas which the circulation of the blood carries through the whole system, not only wrecking the nervous system, but poisoning the brain and dulling the intellect. The generation of these poisonous gases paralyzes the eliminating organs, the stomach, the intestines, the liver, the kidneys, the lungs, and the skin with its 3,000,000 sweat glands and 32 miles of capillary drainage. This floods the whole system with poison, dulls the keenness of the intellect, prostrates the nerves, and generates disease.

Fasting is Nature's method for rest and recuperation of the abused body, and for the elimination of the accumulated poisons generated by decomposition of the surplus food. We say it is Nature's method because it is the method suggested to the beast by the power of instinct. With all our modern civilization, education, refinement and culture, we are forced to admit that the beast and the bird are better nourished and preserved than is man. The beast absolutely refuses food when ill. The bird will not take a single grain of seed more than is necessary for its nutrition. The squirrel will eat half the kernel of a nut and bury the other half, if his wants have been supplied. Man and the hog are the great gluttons of the planet. Fasting is not an inherent, but a required necessity of man because of gluttony and criminal abuse of the body, which renders it a prey to the assaults of disease germs.

### DISCRETION IN FASTING

While fasting has been rendered necessary for the preservation of the health of the body, through its neglect and criminal abuse in the selection of the food supply, fasting must be observed scientifically in order to be a real benefit to the health of the body. A prolonged fast following months and possibly years of heavy over-supply of food, may result disastrously. Fasting must be begun in moderation. The digestive and assimilative organs must have time to adjust themselves to the new conditions, so that the shock to the whole system may not be too pronounced. Preparations for fasting are best made by cutting down one half of the abnormal food supply for a few days, then omit the breakfast for a week, continuing the low ration of about one-third of your ordinary heavy ration for the other two meals. A day's fast will now be a real benefit and no dangers of any ill effect. Continue your no breakfast plan for another week with your low ration at the other two meals, of about one-third the amount of food you consumed when on your heavy ration. You are now prepared for a three days' fruit fast. Omit your morning meal and at about 9 o'clock take a glass of water with the juice of a medium sized lemon squeezed into the water, no sugar. At noon you can use a medium sized apple pared, about six ounces with two ounces of canned pineapple, or some other fruit, and in the evening two ounces of prunes and two ounces of cooked peaches. You can vary this menu daily, using the raw fruits for the noon meal, about eight ounces for the noon meal, and about four ounces of cooked fruit which best agrees with you for your evening meal. Drink not less than three glasses of water per day, including the morning glass of lemon water, and another glass if the system seems to demand it. This fruit fast is perfectly safe, and most helpful for cleansing the system and purifying the blood. Grapefruit is most wholesome in the fruit fast. Use the juice only, not the pulp, and not more than two ounces, this unsweetened. Sugar destroys the medicinal properties of either the lemon juice or the grapefruit juice.

### THE ABSOLUTE FAST

The previous preparation will prepare you for an absolute fast of three days, which may be followed in two weeks after the fruit fast, maintaining for that length of time the low standard ration. You will suffer little inconvenience in your three days' fast and will derive great benefit. The brain will be cleared, the blood purified, the circulation quickened, the stomach will be cleansed and rested, the liver and the kidneys will be revitalized and much poison generated in the system will be eliminated. Break your fast gently with a glass of separated milk for your first meal, or a glass of fresh buttermilk. Follow this with a very light diet, and the food thoroughly masticated. If you have heart disease or any special ailments consult a physician who is a believer in fasting. We do not recommend generally long fasts. If you feel the need of a longer fast for a special purpose, consult a first class physician in sympathy with fasting, or a specialist on fasting. The three days' fast is sufficient when used as a tonic, and general cleanser of the system. When you have completed the three days' fast you have fought the real battle of the long fast. At the close of the third day practically all sense of hunger disappears, and the pangs of the abnormal gnawing appetite disappears, and the battle is one of will and courage. One of the prime essentials in a prolonged fast is to keep both mind and body busy, and to keep away from the formerly tempting foods. Hot water with the lemon juice is ofttimes preferable to the cold water. A general line of exercise is most excellent for keeping the muscles in perfect condition. The morning cold bath for those accustomed to cold baths is very helpful in maintaining the strength of the body, and serves as a most excellent tonic.

## APPETITE

Appetite is man's greatest blessing or his deepest curse. Sad to say, with many it proves the deepest curse in food, even as well as in drink. After all, is it any greater sin for man to wreck muscle and nerve, body and brain by overeating than by drinking? Thousands of people find themselves wrecks, in nerves and tissues, body and intellect, and our best scientists and our most noted physicians tell us the cause of this wreckage is the abnormal food supply. Thousands of these wrecks occur in the early forties when nerve, muscle and brain should be in their prime. A depraved and abnormal appetite is the cause of this wreckage. Abuse of the appetite has caused it to supplant natural hunger, until the gnawing of appetite for an abnormal food supply is as desperate as the gnawing of the drunkard's appetite for strong drink. Hunger which is man's natural guide to a normal food supply has been dethroned, and in its stead appetite has been crowned king. Fasting aids in dethroning appetite, and placing hunger once more on the throne.

### PERSONAL EXPERIENCE IN A TWENTY-DAY ABSOLUTE FAST

In entering upon this absolute fast of twenty days, the author did so after a scientific preparation for the same. Having been at one time a student of medicine, and having studied extensively the laws of health, along the lines of breathing, bathing, diet, and exercise, devoting two years exclusively to this work in the larger cities of the United States, and continuing the study of these subjects during the three years of my superintendency of the Methodist Hospital in Los Angeles, California. This, in addition to my being a lifelong student of health problems, gave me special preparation for the scientific study of this problem. In addition to all this I had observed a number of fasts of three days' duration, and in January, 1914, observed an absolute fast of ten days, doing my regular heavy work of about twelve to fourteen hours per day, as superintendent of the Methodist Hospital.

In my general care of the body I had reduced my weight from about 246 to 175 pounds, and had maintained my weight for about six years at from 175 to 195 pounds. At the beginning of this fast on the 22nd day of May, 1915, I weight 192 pounds net. I ate one meal at 12 o'clock on the 20th, and a light meal again at 11 o'clock on the 21st day of May preceding my absolute fast of twenty days. From this point I began my twenty days' fast. I took a glass of water, four ounces, each morning about eight o'clock, into which I placed the juice of a small lemon, making about one ounce of lemon juice. I took the same amount of water and lemon juice at twelve o'clock and again at five. In addition to this I took about one glass of water extra during the day, sipping a little at a time. I continued this daily until about the twelfth day of the fast, when on about four days I substituted the juice of the grapefruit for the lemon juice. On four occasions when I could not get the lemon juice at noon I substituted a glass of grape phosphate from the soda fountain for the water and lemon juice. On the eighteenth day of the fast, thinking I might be using too much acid, I substituted cherry juice for the lemon juice. This left the mouth and stomach in a perfect normal condition. I used this on the last two days of the fast, using half an ounce for a glass of water.

### CONCLUDING THE FAST

I finished the fast at 12 o'clock on the eleventh day of June, giving twenty days of an absolute fast. My physical condition was most excellent. I felt no special fatigue, the digestive organs all seemed normal, the bad taste in the mouth of the first portion of the fast had disappeared, my temperature was normal, my pulse seventy-five, my strength was phenomenal. I could detect no weakness. My muscles were active and my nerves in splendid condition, my brain perfectly clear. The only weakness I could detect was a slight weakness in the back during the last three days of the fast. I did not spare myself during the fast but performed my regular work the same as though eating my usual two meals per day, never eating breakfast. I had absolutely no hunger at the close of the fast, nor during the last fifteen days thereof.

### KIDNEYS AND INTESTINES

The kidneys were perfectly normal during the entire fast, eliminating six fluid ounces in the morning, three at noon and three in the evening, while I was drinking from sixteen to eighteen fluid ounces per day. The bowels were regular the first two days. I took a heavy physic the morning of the third day. There was no action of the bowels from the third to the fourteenth day of the fast, when there was a perfectly natural action of six ounces. There was no further action until the twentieth day of the fast, when there was a perfectly natural action of three ounces, the action of the fourteenth day was followed with an enema. There was no griping of stomach or intestines during the entire fast. There was no pain whatever in the stomach or intestines, except on the sixteenth day, when I took two drinks of ice water, about three ounces each. I did this as an experiment, holding the water in the mouth a moment before swallowing. This was not serious.

### WORK DURING THE FAST

I performed all my regular work as a pastor, working over twelve hours per day, conducted all my special services. I preached the morning of the second day of the fast, and delivered a short address in a special service in the evening. I delivered the memorial address the ninth day of the fast in the morning, and delivered a sermon-lecture in the evening on "Personal Observations on the Battlefield of the South and a Description of the Battle of Gettysburg." This was a forty-five minute address. I preached both morning and evening of the sixteenth day of the fast, my people said with more than usual interest and vigor. I performed hard manual labor on the sixth, seventh, and twelfth days of the fast, eight hours each, as a test of my strength. I felt little fatigue.

### DECREASE IN WEIGHT

During the first eight days of the fast I lost an average of two and one-half pounds per day; when working hard I lost three pounds for the one day, but about two the following day. After the first eight days I seldom lost more than a pound per day. During the twenty days I reduced my net weight from 192 to 160 pounds, losing thirty-two pounds during the fast.

### PURPOSE OF THE FAST

My reasons for fasting was not impaired health. I was in splendid condition when I began the fast, and only a few pounds heavier than I should be. I started on a three days' fast for preservation of health. I felt so well at the close that I decided to prolong it to ten days as a scientific demonstration of the maintenance of strength of the body without food. I prolonged it to fifteen days, then to twenty days, for the same demonstration of strength without food. I was in perfect health, strength and vigor of nerve, body and brain at the close, and have every reason to believe I could have maintained my strength ten days longer. I had neither hunger nor fatigue at the close.

### BREAKING THE FAST

I broke the fast very slowly. I passed four hours beyond the twenty-day mark before taking anything. I then took about two ounces of cherry juice. I took about the same amount at 6 p. m., then a slice of hygienic toast. The second day I took blackberry juice instead of cherry juice, using about one ounce of blackberry juice, one ounce of sugar, and one ounce of water, three times during the day. I also took about two ounces of hygienic toast during the day. I began to eat regularly about noon on the third day. My bowels were normal from the second day after breaking the fast. I had no hunger at the close of the fast; my appetite did not return until the third day after breaking the fast. Every function of the body seemed to be normal as I began to eat. No food seemed to disagree with me. My stomach was in such perfect condition that I scarcely knew I had one, so far as the process of digestion was concerned. Appetite was dethroned and hunger again asserted its dominion, demanding food only when there was a real demand for nutrition from the body and cell life. I am finishing this article two weeks after the conclusion of the fast. I find my whole body in perfect condition. Digestion and assimilation were never better than at present. My whole nervous system seems in perfect normal condition. My brain is clear and active, so that I can do the heaviest mental work without mental fatigue.

### SHORT FASTS COMMENDED

While I do not recommend a twenty-day fast to those uninitiated in the art, I do most heartily recommend the cutting down of at least one-half the normal food supply of all heavy eaters. I also advise the short fasts as the best and most perfect method of cleansing the system and restoring it to normal condition. This will usually restore to normal condition all the vital organs of the body, so that they may perform their natural functions. The best preparation for fasting is first to cut down half the abnormal food supply, then omit the breakfast for one week; then fast one day, continue the low ration supply. Never resume the breakfast, if you desire to preserve your health. In one week you can observe your three days' fast with great benefit. These can be repeated as your system seems to demand it.

# HELPFUL BOOKS

The following books have been especially helpful to me in the study of the principles of "The New Health Conscience." I wish to express my gratitude to their authors for the personal benefits I have received through many of the principles advocated in these volumes. I believe these authors have rendered a real service to humanity in teaching the principles of health, and the prevention of disease, through these published volumes. I most highly commend them to others.

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